A STUDY TO ASSESS THE EFFECTIVENESS OF ORGAL HYGIENE AND ORAL APPLICATION OF CRYOTHERAPY TO REDUCE MUCOSITIS AMONG PATIENTS RECEIVING CHEMOTHERAPY AT ASHWIN HOSPITAL,COIMBATORE.

By

Reg. No:301411103

A DISSERTATION SUBMITTED TO THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING.

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CHATPER – I

INTRODUCTION

"Time is shortening. But everyday that I challenge this cancer and survive is a victory of me"

- Ingrid Berman,

Health is wealth. Healthy living is not a difficult step. It is merely about making small changes in lifestyle. Disease or illness can really mean a downturn in our lives, but regular medical check ups can easily prevent serious medical problems and help us to live a healthy life.

The health care needs of our land are ever increasing, especially due to the wide spread growth of difficult deadly disease. Among these, cancer is a dreadful disease has a relentless, very painful and debilitating course and if not treated properly in time results in death Birwa, (2010).

The body is made up of many types of cells. These cells grow and divide in a controlled way to produce more cells as they are needed to keep the body healthy. When cells become old or damaged, they die and are replaced with new cells. Sometimes this orderly process goes wrong. When this happens, cells do not die when they should and new cells form, when the body does not them. The extra cells may from a mass of tissue called a tumor.

Cancer is the uncontrolled growth and spread of cells. It can affect almost any part of the body. The growth often invades surrounding tissue and can metastasis to distant sites.

Cancer is a leading case of death around the world. WHO estimates that 84 million people will die of cancer between 2005 and 2015 without intervention. Each year over 12 million people receiver a cancer diagnosis and 7.6 million die of this disease.

Ball (2008) said that, their ultimate goal in treating patients with cancer is to cure the disease with a combination of treatment modalities directed at the primary tumor surgery or radiation and potential metastasis chemotherapy is the use of one or more several drugs to kill cancer cells. The anticancer drugs work by stopping the division and reproduction of cancer cells .Amber (2008).

National Cancer Institute (2011) described chemotherapy as a cancer treatment that uses high does of radiation to kill cancer cells and stop them from spreading. More than half (about 60%) of people with cancer get chemotherapy.

Halman and Sikora (2012) conducted a study regarding classification of chemotherapy side defects. In that side effects of chemotherapy can be classified as acute or delayed. The acute effects are allergic reactions and dysrhythima. The delayed effects are mucositis, hair loss, diarrhea, nausea and vomiting and bone marrow depression. Oral complication that arises with chemotherapy fungal or viral infection, dental carries, loss of taste and osteoradio , necrosis . Zlotolow, (2007).

Trotti (2010) performed a study determine the mucositis incidence, severity and associated outcomes in patients receiving chemotherapy. The mean incidence was 80 % . Over one half of patients (56%) who received high dose of chemotherapy experienced severe mucositis (grade -3.4).

Uma maheswari (2010) recommended that preventive measures play a major role in the treatment of side effects due to cancer therapy. Patients should be referred to a dentist for comprehensive examination to identify and correct any potential complication before cancer therapy is initiated.

Elliot (2013) recommended that patients should brush their teeth 3-4 times a day with a soft tooth brush or sponge and use floss with care, so as not to cut or injure the gums. Intra oral treatment is used commonly among most patients who are having soreness, erythema and moderate tanning of epithelium.

Nurse play a vital role in identifying patients who are at risk for developing chemotherapy induced mucositis. Prompt identification and initiation of treatment will help patient to control the mucositis and improve prognosis.

NEED FOR THE STUDY

Cancer statistics of India (2010) described that every year about 85,000 new cancer cases are diagnosed in that about 58,000 cancer related death occur every year. India has the highest number of oral throat cancer in the world. Average life span is about 58 years in India compared to 75 in developed world.

Maheswar (2011) reported that ulcerated oral mucositis occurs in approximately 40 % of patients receiving chemotherapy. In approximately 50 % of these patients, the lesions were severe and required medical interventions including modification of their cytotoxic chemotherapy.

Galitis, N. et. AL., (2010) reported the incidence and severity of mucositis among cancer patients being treated for common, head and neck solid tumor with multicycle therapy for cancer of head and neck. Using National Cancer Institute criteria, severe mucositis was noted in 57% patients.

Demo or, et. Al., (2013), examined symptoms of oral mucositis among cancer patients being treated for common, head and neck solid tumor with multicycle therapy at six community oncology clinics. The author noted that average mouth sore scores peaked by day 40 (cycle) and that patients who reported any symptoms of mouth sores by day 21 (cycle 1) were 5 times more likely to develop severe mucositis by day 126 than patients who reported no symptoms.

Daffier (2009) explained that within 5-7 days histological changes occur, 7-14 days a visible inflammation and uncertain and 21 days there is resolution of mucositis. He recommended four steps to improve prognosis. They are regular dental evaluation, patient education for intensive oral hygiene, daily oral assessment symptomatic treatment and prevention of complications.

Mucositis is seen with in the first 2 weeks of cryotherapy of head and neck and is related to dose and duration of treatment. The condition persists until 2 to 4 week after the last treatment, when the normal healing process, unless it is complicated by secondary infection.

During the investigators clinical experience in the cancer hospital, the investigator noticed several patients who have postponed their treatment due to mucositis. The investigator also noticed that if they maintained a regular oral hygiene practice along with cryotherapy , this condition can be avoided. So the investigator decided to do study on effectiveness of cryotherapy in reducing mucositis.

Statement of the Problem

The effectiveness of oral hygiene and oral application of chemotherapy to reduce Mucositis among patients receiving chemotherapy at Ashwin hospital, Coimbatore.

Objective

- To assess the oral hygience and degree of mucositis among patients receiving chemotherapy
- To Provide oral hygiene and oral application of chemotherapy to reduce Mucositis among patients receiving chemotherapy.
- To assess the effectiveness of oral hygiene and oral application of chemotherapy reduce Mucositis among patients receiving chemotherapy.
- To find out the association of chemotherapy in reducing Mucositis in patients receiving chemotherapy.

Hypothesis

There is significant difference between pre test and post test score of oral hygiene and oral application of chemotherapy among patients receiving chemotherapy

Operational Definitions

Effectiveness

It refers to the extent to which cryotherapy become successful in reducing Mucositis after chemotherapy

Oral hygiene

This include the practice such as clean teeth and mouth after every meal, use of soft bristled brushes and use of liquid paraffin for dry lips.

Cryotherapy

Cryotherapy is the local or general use of low temperatures in medical therapy. Cryotherapy is used to treat a variety of benign and malignant tissue damage, medically called lesions. The term "cryotherapy" comes from the Greek cryo meaning cold, and therapy meaning cure.

Cryotherapy consist of the use of Ice Chips when bolus chemotherapy is administered.

Mucositis

It is the inflammation of oral mucosa ranging from mild soreness to severe ulceration and pain after chemotherapy.

Chemotherapy

It is the treatment option for cancer by the use of one or more several drugs to kill cancer cells.

Assumption

- Patients receiving chemotherapy will develop Mucositis from 7-10 days of treatment
- Patients receiving radiation therapy will develop Mucositis beginning with histopathalogical changes from 5-87 days.
- Good oral hygiene practice are essential to prevent chemotherapy induced Mucositis.
- Cryotherapy is having anti inflammatory action and stimulating effect on tissue repair which made it benefit for relief of oral conditions resulting from chemotherapy cancer.

CHAPTER – II

REVIEW OF LITERATURE

Review of literature is an important step in the development of the research project and in broadening, understanding and developing in insight into the problem area. It presents a review of selected literature relevant to the study.

Literature Review is Discussed Under the following Headings

- Literature reviews related to cancer and its treatment
- Literature reviews related to side effects of cancer therapy
- Literature reviews related to oral complications and management.

Literature Review Related to Cancer and its treatment

American Cancer Society (2013) described that cancer is a feared and dreaded disease of several reasons. It may be present in a advanced stage with no symptoms compliance with vigorous and sometimes disfiguring treatment does not guarantee a cure.

Galen (2011) explained cancer as being crab like nature. Cancer may be regarded as a group of disease characterized by an abnormal of cells, ability to invade adjacent tissues and distant organs, the eventual death affected by several organisms.

Cancer incidence rate is the number of new cancers of a specific site occurring in a specified population during a year usually expressed as number of cancer per 1,00,000 popular. Cancer incidence rate in India is 85,000 per year (National Cancer Institute 2010).

Cancer Society of India (2009) identified cancer as the second leading cause of death of worldwide and was expected to increase by 50 % in the coming 25 years. Two third of new cases are detected in the advanced stages when treatment is infective. Such patients continue to block and exhaust the resource which may cause cancer.

The outlook of patients with cancer has greatly changed because of scientific and technological advance. As a result of underlying disease or various treatment modalities, however the patient with cancer may experience a variety of secondary problems such as infection, reduced WBC count, bleeding, skin problem, pain fatigue and pathological illness Smelter,(2011).

American Cancer Society (2008) revealed that the incidence of breast cancer in India is 19.1% and deaths 10.4%. About 1.3 million women will be diagnosed with breast cancer annually world wide, about 4,65,000 will die from the disease. The incidence could go up by 50 % to 1.5 Million by 2020.

Robert (2011) conducted a study on lung cancer due to smoking which revealed the incidence of that lung cancer accounts for more than 50 % of all male death from cancer in Western countries where it is widely prevalent. A tumour arising from a peripheral bronchus may attain a very large size without producing significant degree of collapse. In small cell type cancer, radiation can be used only over some parts of the body where caner has spread and is for treating symptoms not for cure.

Heman, (2012) stated that malignant cells have two other common characteristics as uncontrolled division. They lost their specialized structure and functioning within an organism. This makes more of them reproduce and divide at a greater rate than normal cells. This lack of adhesion and loss of contact inhabitation permit them to metastasis.

Hassey, (2012) stated that chemotherapy has been widely used for the palliative management of cancer. Local control and survival rate is alos high and aiming for caring illness.

Felon ,(2010) stated the effectiveness of pre operative chemotherapy for respectable thoracic esophageal cancer. The patients treated with chemotherapy have long life expectancy and it shrinks the tumor and made it easier to operate and stopped its spreading.

Shelly, et. AL.,(2009) analyzed the effectiveness of chemotherapy treatment for prostate cancer. The result of these study suggested that randomized trails of chemotherapy suggested an improvement in over all survival pain relief and quality of life.

Chalete, et.AL., (2009) performed a study to assess the efficiency of doxorubicin based combination chemotherapy for adult patients with metastatic soft tissue sarcoma. This study stated that survival rate tumor shrinkage is better in combination chemotherapy regimens than the single agent doxorubicin chemotherapy.

Cathy, (2012), described presently, more than 50 % of oral cancer care detected only after they have reached an advanced age. Such cancers are disfiguring and painful the treatment required is both extensive and expensive and survival rates are low, within 5 years. Surgery and radiotherapy can cure only the early cancer.

Literature Related to Side effects of Cancer Therapy

Algemir, et.AL., (2012) analyzed the side effects on expectations of cancer patients prior to treatment and found that patients anticipated an average of seven symptoms and the most common expected side effects were fatigue, nausea, mucositis, hair, loss, skin problems, weight loss, pain and sleep deprivation.

Jaggi (2011) declared that a feeling of fatigue and diminished appetite are the commonest side effects, though not observed in all patients. Minor decrease in lymphocyte count is common, but a frequent check on peripheral blood is made through out the treatment to adjust this if significant marrow suppression occurs.

Elizabet and Maria, (2011) conducted a study among seventeen patients aimed to monitor and evaluate the occurrence and intensity level of nausea, vomiting and diarrhea in patients with colorectal cancer. The results showed that most of the patients (82.4%) displayed at least one of the signs and symptoms under study between first and twenty day of treatment cycle.

Quargnenti(20070 performed a study by using a risk assessment tool for evaluating the side effects among 30 patients after their 1st cycle of chemotherapy. The most common side effects reported by the patients were anemia 45 %, oral mucousal problems (30%) nausea and vomiting (20%) and constipation (15%).

Winterberg. et .AL.,(2010) conducted a descriptive study among cancer patients receiving chemotherapy with Cyclophosphamide, Doxorubicin, Vincristine, Prednislone, to assess the problems experienced by these patients and found that all patients experienced alopecia (90%) as the most common problem. The other problems were fatigue (77%) taste changes (74%) and constipation (65%).

Blijlevens, et.AL., (2009) in their prospective mucositis aduit assessed the incidence, duration and determinates of sever oral mucositis, in patients with multiple myeloma or Non Hodgkin's receiving high dose conditioning chemotherapy before autologous stem cell transplantation. The results were severe oral mucositis occurred in 56 % of patients with myeloma nad 32-53 % of patients with Non Hodgkin's lymphoma. Severe oral mucositis was more in the transplantation setting than previously reported, justifying effective preventive and therapeutic measures.

Cheng et.AL.,(2008) in this study demonstrated that the orophrayngeal Mucositis Quality of Life scale was effective in demonstrating that traditionally oral mucositis toxic chemotherapy or chemo radiation regimens were associated with a poorer quality of life, especially with respect to symptoms like swallowing and diet.

Dorr, et.AL.,(2008) evaluated the relationship between patient self evaluations of their mouths during radio chemotherapy and clinical diagnosed mucosistis in the same patients. The author concluded that National Cancer Institute clearly mirrors the subjective assessment of patients and that the agreement indicates that mucositis significantly impact on patient's quality of life.

Grunberg , et.AL., (2009) reported the results of analysis of colorectal cancer patients receiving FOLFOX chemotherapy in a multinational investigation. Oral mucositis and diarrhea were identified from patients reporting with those completed at

base line and daily during treatment. Mucositis and diarrhea often occurred together. Patients with mucositis had poorer quality of life compared as measured by both questionnaire.

Susan (2008) conducted at study to assess the effect of treatment intensification on acute local toxicity during radiotherapy for head and neck cancer, Among 149 patients with head and neck cancer who were evaluated for local toxicity on a weekly basis, 28 % recorded mucositis, 33 % dysphagia, 40 % pain and 12 % skin injury.

Clara (2009) performed a study to investigate the side effects experience by patients with colorectal cancer receiving 5- flurocel chemotheraphy. This study revealed oral mucositis as the worst side effects experienced by patients and also change in taste and weight loss.

Keefe, et.AL.,(2008), reported that oral mucositis is associated with increased resource use among patients receiving treatment for cancers of head and neck. Severe mucositis symptoms were reported in 92 % patients with mouth cancers and 82 % of patients with laryngeal hypo pharynx cancers. Among patients with moderate to severe mucositis, gastrostomy tubes were required in 25 % unplanned office visits in 37 % hospitalization in 18 % and transfusion in 5 %. Even low grade mucositis was associated with unexpectedly high resource utilization.

Paul (2008), conducted an awareness programme for reducing chemotherapy induced mucositis in Kerala. The programme provided scientific information of self care, exercises and nurse support to promote prevention of mucositis. The effectiveness of this programme was tested on a large scale randomized control trial. The result was that there was a reduction in incidence of oral mucositis from 46 % to 20 %.

Emerton and Philip ,(2011) conducted a study on quality of life and oral functions in patients treated with cryotherapy . The purpose of this was to assess the quality of life, oral function and oral symptoms in a cohort of patients during after chemo therapy. Oral complications during and after cryotherapy were common and affect the quality of life.

Evan (2007) stated that teaching the patient about adequate oral intake before, after and during cisplastin therapy and maintaining accurate intake and out put record . Therapy can prevent the renal cell damage due to cisplastin administration. Proper evaluation of electrolyte level and renal functioning also could aid in preventing the complications.

Oncology nurse have developed scoring symptoms for assessment of oral mucositis and for patient management. Oral mucosa ratings scale had an examination rating scale to quality the type and severity of clinically evident oral mucosal changes, atrophy, erythema, ulceration and pseudo membraneous hyper keratoic lichenoid and edematous changes with a scale ranging from 0-3 Sonis, (2007).

Demoor, et.AL., (2007) examined symptoms of oral mucositis among cancer patient being treated for common , non head and neck solid tumours with multi cycle therapy at 6 community oncology clinics. Mucositis symptoms were determined using patient response on a ’10 point Likert scale. The mucositis symptoms were common in community oncology.

Rebenstein et.AL.,(2007) performed a study about the effect of oral and GI mucositis. They found that up to 100 % patients undergoing high dose chemotherapy and hematopoietic stem cell transplantation, 80 % patients with malignancies of head and neck receiving radio therapy, a wide range of patients receiving chemotherapy had oral and GI mucositis. Hence oral gastro intestinal mucositis is a common side effect of many anti cancer therapies .

Literature Review Related to Oral complication and Management with Cyrotherapy.

Xanthinaki et.AL., (2013) evaluated the markers of inflammation in head and neck cancer patients with varying levels of radiation. Cytological smears were obtained by brush biopsy from oral cavities of 35 patients. Tumour necrotizing factor and interleukin -1 beta expression were more frequent in patients with clinically significant mucositis than patients with out this condition.

World Health Organization (2013) developed an oral toxicity scale for the measurement of oral mucositis which included 5 grades beginning from 0 to 4. Grade 0 is non category, grade 1 is soreness and discomfort, grade 2 is erythema, ulcer grade 3 is extensive ulcer and grade 4 is alimentation not possible.

Johnson (2012) suggested that pre treatment eradication of infection and maintenance of good oral hygience have been the main therapeutic options for patients with cryotherapy induced mucositis. A healthy oral and gastro intestinal mucosa is of significant value for emotional expression, verbal communication, comfort, nutrition, elimination and fluid and electrolyte imbalance.

Stevenson (2011) discussed about nasopharyngeal mucositis after cancer therapy. He mentioned current care of patient with mucositis is essentially palliative and includes appropriate oral hygiene, non irritating diet and oral care procedures, use of topical anesthetics.

Robert (2010) studied about current trends in managing oral complications and he concluded that many untested oral preparations can reduce symptoms of oral mucocitis. Currently accepted elixirs include a combination of benadryl, kopectate, sucralfate, antacids, cortical steroids, dyclonine and viscous lidocaine. Commercial mouth rinse should be avoided.. The alcohols and phenols contained in these preparations may further dehydrate the mucosa.

Genot, et.AL.,(2010), evaluated the ability of low energy laser treatment to delay the progression of mild mucositis to more severe grades. The time of progression of lesions to severe mucositis appeared to be delayed in the laser treatment patients. The low level laser therapy is appeared to be effective for treatment of oral mucositis.

Trotti, A (2010) who performed a study to determine the mucositis incidence, severity and associated out comes in patients receiving chemotherapy. Mucositis was defined using a variety of scoring systems. The mean incidence was 80 % over one half of patients who received high dose chemotherapy experienced severe mucositis. Mucositis is a frequent severe toxicity in patients that leads treatment interruptions.

Wojtaszek, C. (2009) studied the management of chemotherapy induced Mucositis. Mucositis is estimated to occur in 40 % of all patients undergoing chemotherapy and its incidence is 2 to 3 times higher in patients with hematological malignancies. Oncology nurses share responsibility in improving patients outcome related to Mucositis by remaining knowledgeable, using evidence based practice and ensuring follow up.

A qualitative analysis on 18 patients stated that Mucositis is a toxic side effect of chemotherapy. This inflammation and ulceration occurs due to rapid cell destruction. Oral mucositis is a complex problem involving not only the epithelial lining but also involves the endothelial, extra cellular matrix and connective tissue Demarosi F, (2007).

Elting, L.S. (2008) conducted a descriptive study to identify the effects of cancer therapy in 80 patients with cancer, using grading scale to grade oral mucositis and foun 75 % people treated with chemotherapy developed grade ¾ oral mucositis. High grade oral mucositis is associated with additional cost, above the base line treatment costs.

Doer et.AL., (2008) compared the efficacy of mouth washes containing dexpanthenopn or tap water, with or with our additional mechanical debridement, on daily mucositis grades as measured by National Cancer Institute criteria. The results of the study failed to demonstrate any advantage to dexpanthenol in reduction of mucositis severity.

Clarkson, J.E. (2007) performed a meta analysis to determine interventions for treating oral mucositis for patients with cancer receiving chemotherapy. Four agents were found to be effective for improving mucositis. Benzydamine. HC1, Sucralfate and Chlorhexidine were found to be ineffective. Thus concluded no single measure is effective.

Karoyozoglu,S (2006) investigated the effect of oral cryotherapy on the development of chemotherapy induced mucoitis among 60 patients. Oral cryotheraphy was initiated 5 minutes before chemotherapy and maintained during venous infusion of

etoposide, cisplastin, mitomycine and vinblastin. Oral cryotherapy makes an important contribution to the protection of oral health by reducing mucositis.

In a prospective randomized double blind, placebo controlled trial demonstrated carpools to be a significant adjuvant in the management of mucositis associated with high dose chemotherapy. Caphosol significantly reduced the duration and severity of oral mucositis as well as need for opioid medications (Schubert M, 2004).

Ancy, (2010) conducted a study to assess the effectiveness of oral hygience and saline soda gargle to prevent mucositis among the patients receiving chemotherapy and concluded that oral hygience and saline soda gargle were effective in reducing mucositis.

British Columbia cancer Agency (2009) conduced a study which shows that application of cryotherapy 6 times a day held in mouth for 30 minutes will reduce the severity and duration of oral mucositis in patients who are undergoing mitotoxic chemotherapy for cancer treatment.

Biswal et. AL.,(2008) conducted a study to evaluate the effect of cyrotherapy on chemotherapy induced mucositis. Patients were evaluated every week for the development of chemotherapy mucositis using the chemotherapy therapy oncology Group grading system. There was significant reduction in the symptomatic grade ¾ mucositis among cryotherapy treated patients compared to controls. Fifty – five percent of patients treated with cryotherapy showed no change or a positive gain in body weight compared to 25 % in the control arm (p.0.053) the majority of who lost weight.

Conceptual Framework

The conceptual framework for the study was adopted from Roy's Adaptation Model (1976). Roy point out the adaptation is a dynamic state of equilibrium involving both high and how response brought by person triggered stimuli. It involves an open system in which stimuli enters from the environment and change the behavior of a person to adopt a condition.

Input

Input consists of stimuli which can come from the environment or within a person. In this study stimuli refers to chemotherapy induced mucositis.

Throughput

Throughput makes person processors and effectors. Processors refer control mechanism that a person uses an adaptive system.

Physiologic Function

It involves body's basic needs. Here it refers to intact oral mucosa achieved or maintained by a good oral hygiene practice and oral application of cryotherapy.

Self Concept

It involves maintaining a good body image. Here it refers to mucosal integrity and thereby improved personal self.

Interdependence

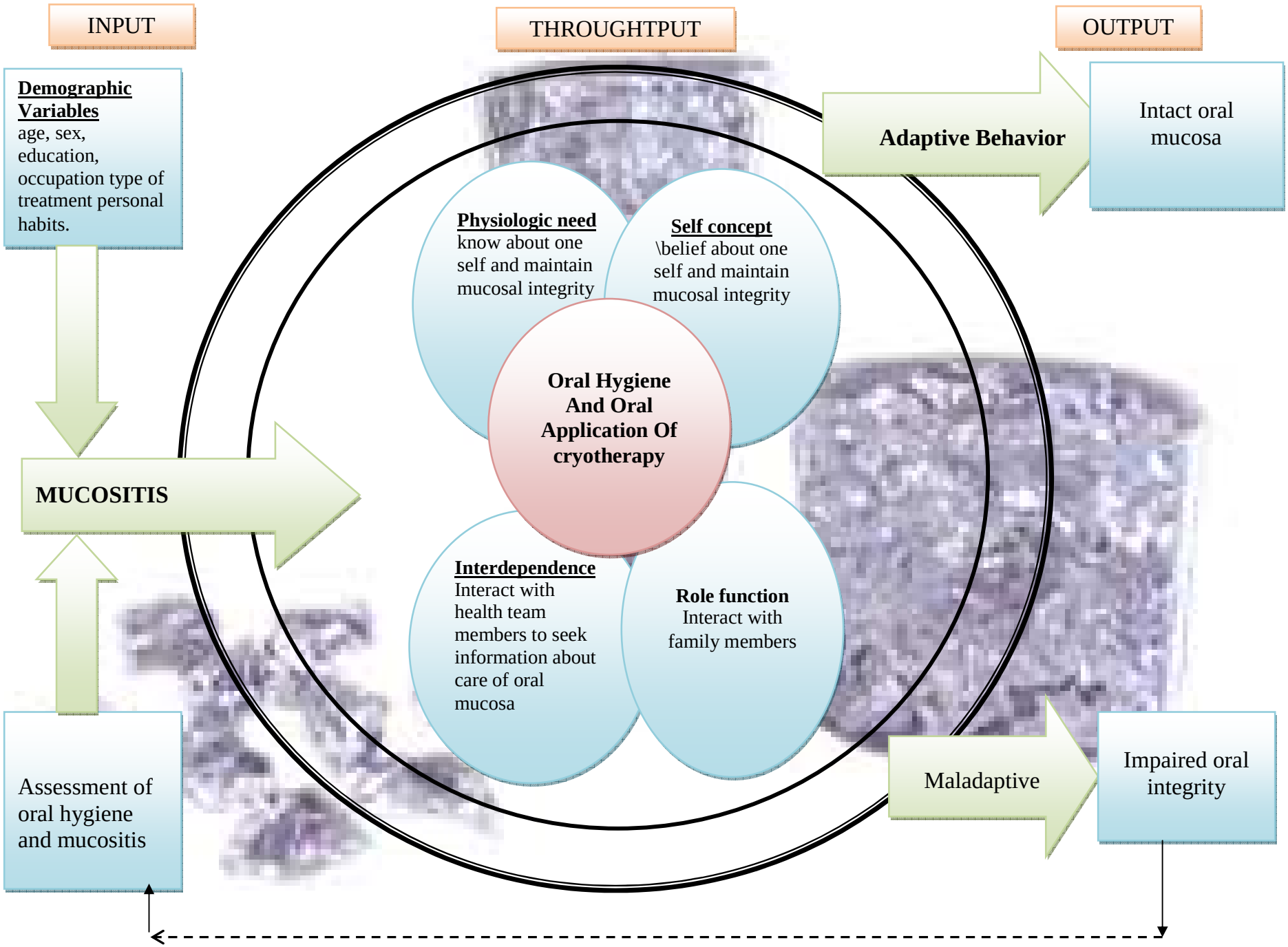
Interdependence refers to the interaction with health team members to seek information about care of mucositis.

Role Function

This involves behavior of a person which depends on how a person interacts with other in a given situation. Here the client interacts with family members husband , relatives and other members in the society.

Output

Output is the outcome of the system. This can be adaptive or ineffective behaviors. Adaptive behavior means healed mucositis due to healthy oral hygience practice and oral application of cryotherapy . Ineffective behavior means development of mucositis.


INPUT
THROUGHTPUT
OUTPUT
Demographic Variables
age, sex, education, occupation type of treatment personal habits.
Adaptive Behavior
Intact oral mucosa
Physiologic need
know about one self and maintain mucosal integrity
Self concept
\belief about one self and maintain mucosal integrity
Oral Hygiene And Oral Application Of cryotherapy
MUCOSITIS
Interdependence
Interact with health team members to seek information about care of oral mucosa
Role function
Interact with family members
Assessment of oral hygiene and mucositis
Maladaptive
Impaired oral integrity

CHAPTER –III

METHODOLOGY

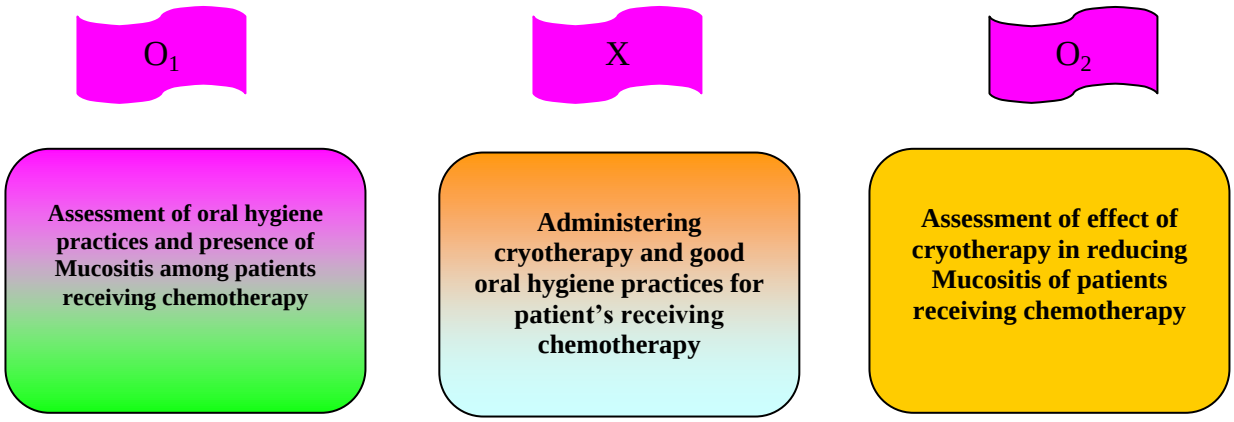
It includes research approach, research design, setting of the study, population, sample size, sampling technique, criteria for selection of sample, description of the tool, content validity, pilot study, procedure of data collection and plan for data analysis.

Research Approach

Quasi experimental approach, a subtype of quantitative approach was used for the present study.

Research Design

One group pre test post test experimental study design was adopted in the study.



O1 –Pre test

X -Intervention

O2 -Post test

Setting of the Study

The study was conducted at Ashwin hospital, Coimbatore.

Population

The accessible population of the study includes patients with cancer undergoing chemotherapy.

Sample Size

The sample size for the present study was 30.

Sampling Size

The samples were selected by non probability convenient sampling. The investigator got information of the samples and the samples that met the inclusion criteria were included.

Criteria For Selection Of Sample

Inclusion criteria

- Patients who are able to follow instructions
- Both male and female patients above 18 years of age
- Patients who have cancer, undergoing chemotherapy and has completed 1 week of treatment.

Exclusion Criteria

- Patients who already have extensive severe mucositis
- Patients who has been taking other mouthwashes since 7 days of present course of study
- Patients with diabetes mellitus.

Description of the Tool

The researcher has developed a questionnaire after reviewing the literature and getting option from experts to measure the effectiveness of oral hygience and oral cryotherapy in reducing Mucositis.

Part – A Demographic Variables

Demographic variables which include age, gender, education, occupation, personal habits and type of treatment.

Part – B Modified Oral Mucositis Assessment Scale

This is a standard tool for assessing, Mucositis , adapted from Bruya and Maderia – Mucositis after Chemotherapy.

5 Major parts, lips, tongue, mucous, gums, teeth along with Saliva, voice and ability to swallow were observed each of texture, colour and moisture.

Minimum score	:	19
Maximum score	:	76
Normal	:	19
Mild	:	20 to 38
Moderate	:	39 to 57
Severe	:	58 to 76

Part C Questionnaire to Assess the Practice of Clients in Reducing Oral Mucositis After Chemotherapy using cryotherapy

It includes 11 questions in which right answer in given 1 mark and wrong answer 0.0 Maximum score is 11 and minimum score is 0.

Testing of the Tool

Content Validity

The tool was given to five experts in the field of nursing and Department of Oncology for content validity. All comments and suggestions given by the experts were duly considered and corrections were made after discussion with research guide.

Reliability

The reliability of the tool was determined by Spearman Brown split Half Technique showing 0.89.

Pilot study

The pilot study was conducted to make sure that the tool was capable of eliciting responses from the respondents. It was conducted among 10 samples for a period of work

The report showed that there was a decrease in symptoms of Mucositis due to good oral hygiene practice and oral application of cryotherapy. The result shows that the tool was reliable.

Data Collection Procedure

After getting permission from the oncology head of Ashwin Hospital, Coimbatore, the researcher met patients with Mucositis after chemotheraphy. The purpose and duration of the study was explained to the patients.

The study was conducted for a period of one month from 01.11.2015 to 30.11.2015. The list of patients who are undergoing chemotherapy were collected. Then the investigator maintained good rapport with the clients. The samples were selected by convenient sampling technique with reference to the selection criteria. On the first day the samples were assessed for oral health practice and mucositis by using mucositis assessment scale and questionnaire. Then the participants were given cryotherapy and asked them to keep ice chips in the oral cavity for 30 minutes. The ice chips should be taken with 30 minutes by oral for six times a day at a time interval of every 4 hourscontinuously for 2 weeks. Each day the mucositis was assessed before and after the application on cryrotherapy post test was done on the 14^{th} day. Pamphlets were distributed to all respondents who participated in the study.

Plan for data Analysis

The investigator adopted descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (paired ‘t’ test) to analysis the data. The demographic variables were analysed by using frequency and percentage. The effectiveness of cryotherapy and association between variables were analysed by using paired ‘t’ test and X^2 test respectively

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of the data collected from patients with cancer receiving chemotherapy to assess the effectiveness of oral hygiene and oral application of cryotherapy in reducing mucositis. The findings based on the descriptive and inferential statistical analysis were presented under the following headings.

Section I : Distribution of demographic variables of patients receiving chemotherapy.

Sectoin II : Distribution of statistical value of pre test and post test Regarding mucositis of patients receiving chemotherapy

Sectoin III : Distribution of statistical value of pre test and post test regarding cryotherapy application of patients regarding chemotherapy.

Section IV : Association of selected demographic variables with pre test or post test score of mucositis of patients receiving chemotherapy.

SECTION – I

Table 1. Description of Demographic Variables of Patients Receiving Chemotherapy.

(n=30)

S.No	Demographic Variables	Frequency (f)	Percentage (%)
1	**Age**		
	a) 18-30 years	0	0
	b) 31-40 years	0	0
	c) 41-50 Years	17	56.7
	d) > 50 years.	13	43.3
2	**Sex**		
	a) Male	13	43.3
	b) Female	17	56.7
3	**Education**		
	a) Illiterate	12	40
	b) Primary	17	56.7
	c) Secondary	1	3.33
	d) Higher Secondary	0	0
	e) Graduates.	0	0
4	**Family Type**		
	a) Nuclear	5	16.7
	b) Joint	25	83.3
5	**Family Income Per month**		
	a) Rs. 2001 – 5000/-	10	33.3
	b) Rs. 5001- 10,000/-	20	66.7
	c) >Rs.10,000/-	0	0

(Table 1 continued)

S.No	Demographic Variables	Frequency (f)	Percentage (%)
	Occupation		
	a) House Wife	1	3.33
	b) Mill Worker	1	3.33
	c) Farmer	7	23.4
	d).Labor	21	70
	e) Student	0	0
	f) Driver	0	0
7	**Personal Habits**		
	a) Smoking	6	20
	b)Tobacco chewing and betel chewing	12	40
	c) Consumption of alcohol	3	10
	d) Nil	9	30
8	**Weight of patient**		
	a) 35 -45 kgs	5	16.7
	b) 46-55 kgs	20	66.7
	c) 56-70 kgs	5	16.6
	d) >70 kgs	0	0
9	**Duration of Hospitalization**		
	a) <7 days	0	0
	b) 7-15 days	22	73.3
	c) >15 days	8	26.7
10	**Method Chemotherapy**		
	a)Oral tablets	6	20
	b)Intravenous	24	80

Table I shows the description of demographic variables of patients with cancer receiving chemotherapy

Among the respondents, 17 (56.7%) were between age 41-50 and 13 (43.3%) were between age above 50 years.

- Regarding the respondents 13 (43.3%) were male and 17 (56.7%) were female.
- With regards to educational status of patients 12 (40%) were illiterate, 17 (56.7%) had undergone primary education and 1 (33.3%) were secondary.
- Among family type 5 (16.7%) were from nuclear family and 25 (83.3%) were from join family.
- Regarding family income per month 10 (33.3%) were between the range of Rs. 2001-5000 and 20 (66.7%) were between the range of Rs. 52001-10000.
- Among occupation 1 (33.3%) house wife, 1 (33.3%) mil worker, 7 (23.4%) farmers and 21 (70%) were labors.
- With regards to personal habits followed by patients 6 (20%) had smoking, 12 (40%) and betel chewing, 3 (10%) had alcohol consumption and 9 (30%) belong to none category .
- On considering the weight of the patient 5 (16.7%) were between 35-45 kg, 20 (66.7%) were between 46.55 kg and 5 (16.6%) were between 56-70 kg.
- About duration of hospitalization 22 (73.3%) and stayed in hospital for 7-15 days and 8 (26.7) above 15 days.
- Regarding the treatment 6 (20%) were taking Oral tablets and 24 (80%) Intravenous

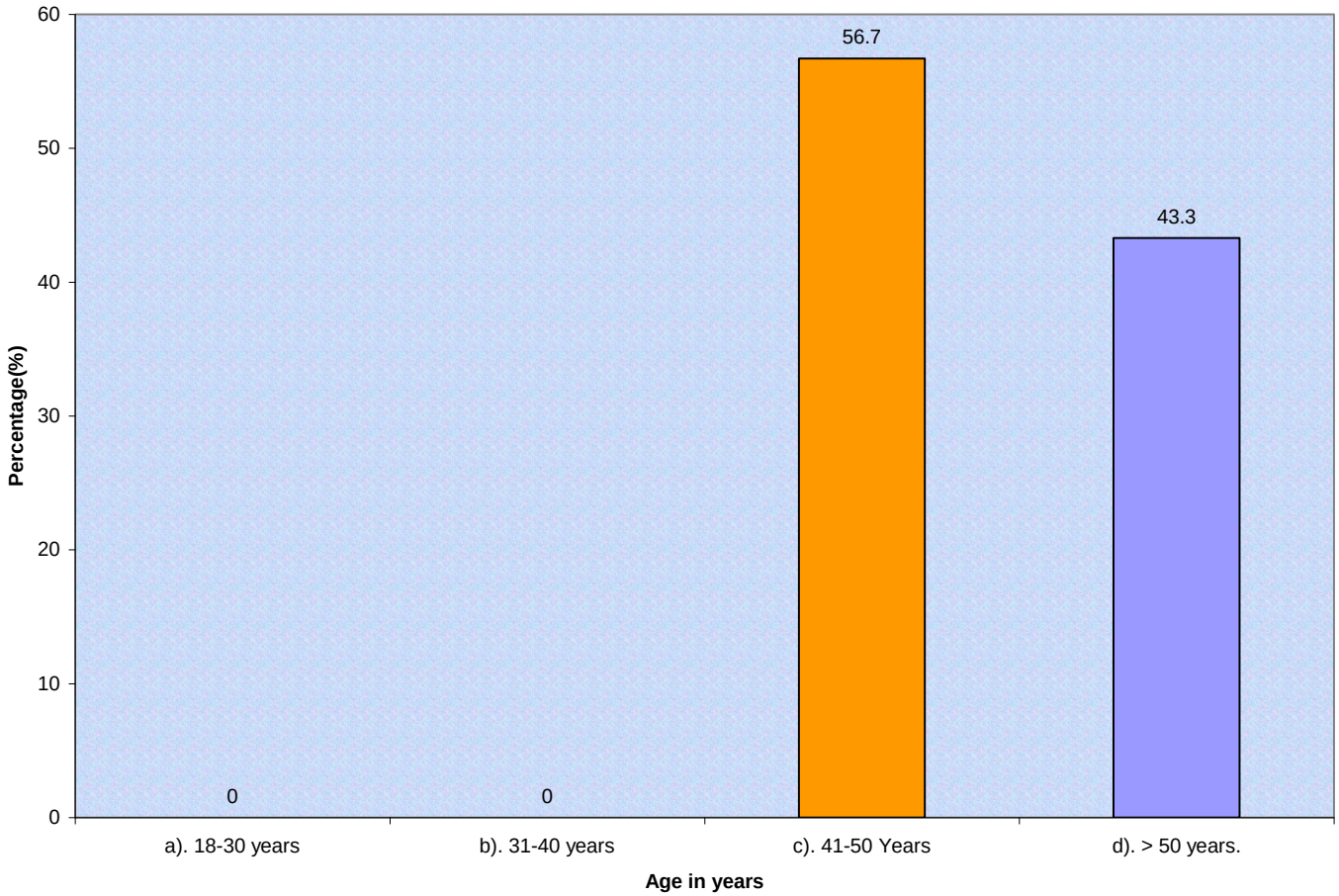


Figure : 3 Distribution of Demographic Variable According to the age of Patients Receiving chemotherapy

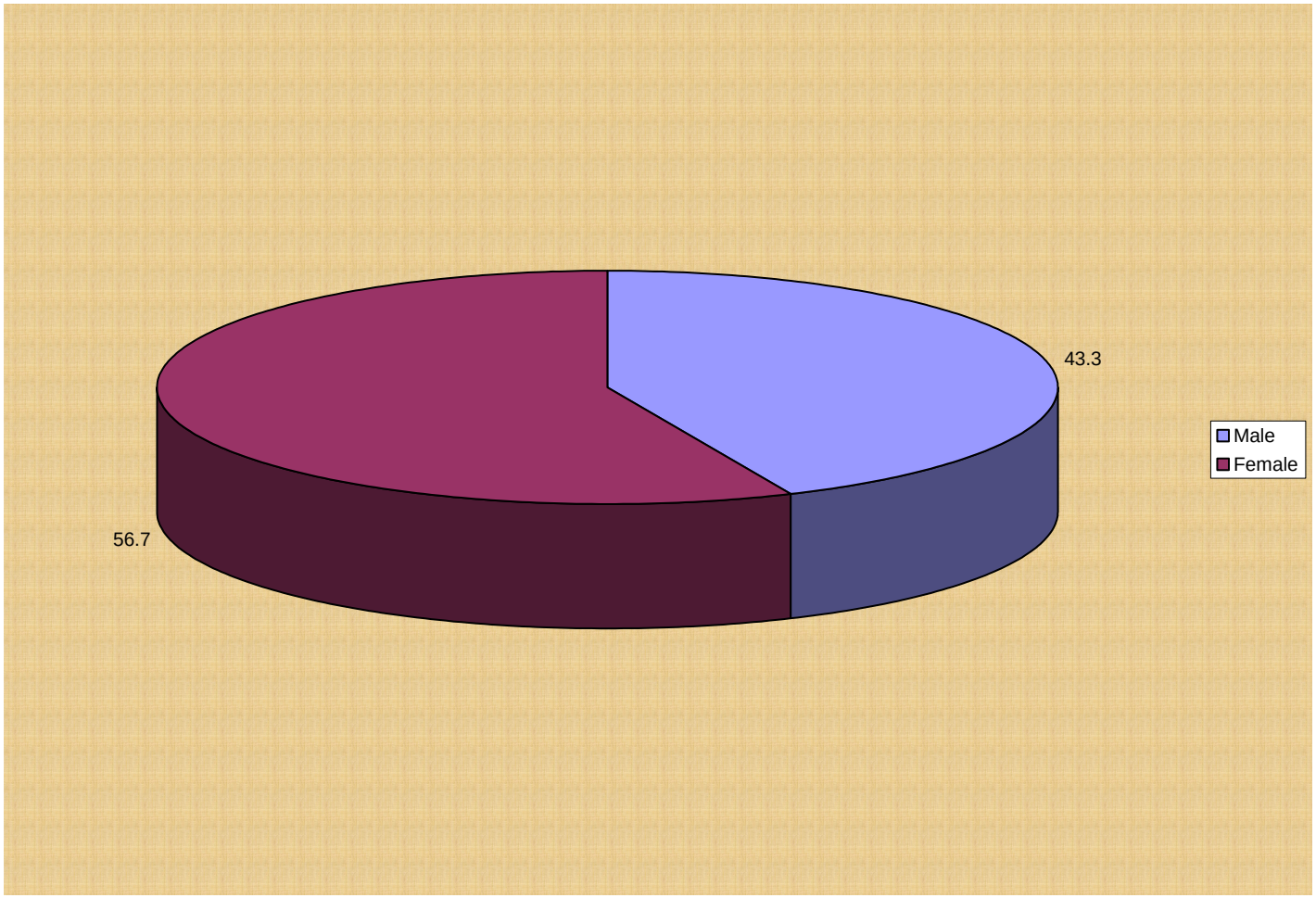


Figure : 4 Distribution of Demographic Variable According to the sex of Patients Receiving chemotherapy.

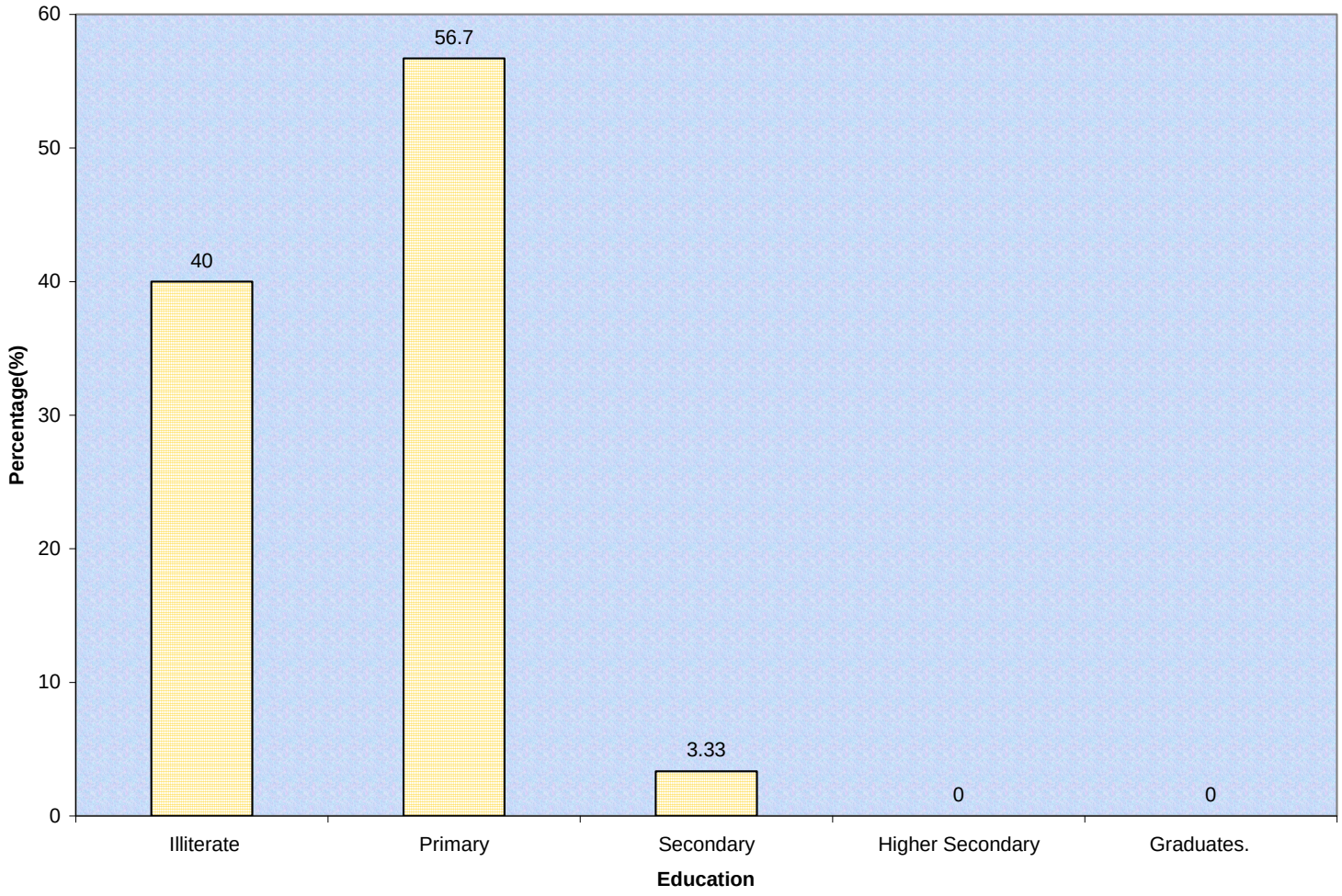


Figure : 5 Distribution of Demographic Variable According to the Education of Patients Receiving chemotherapy.

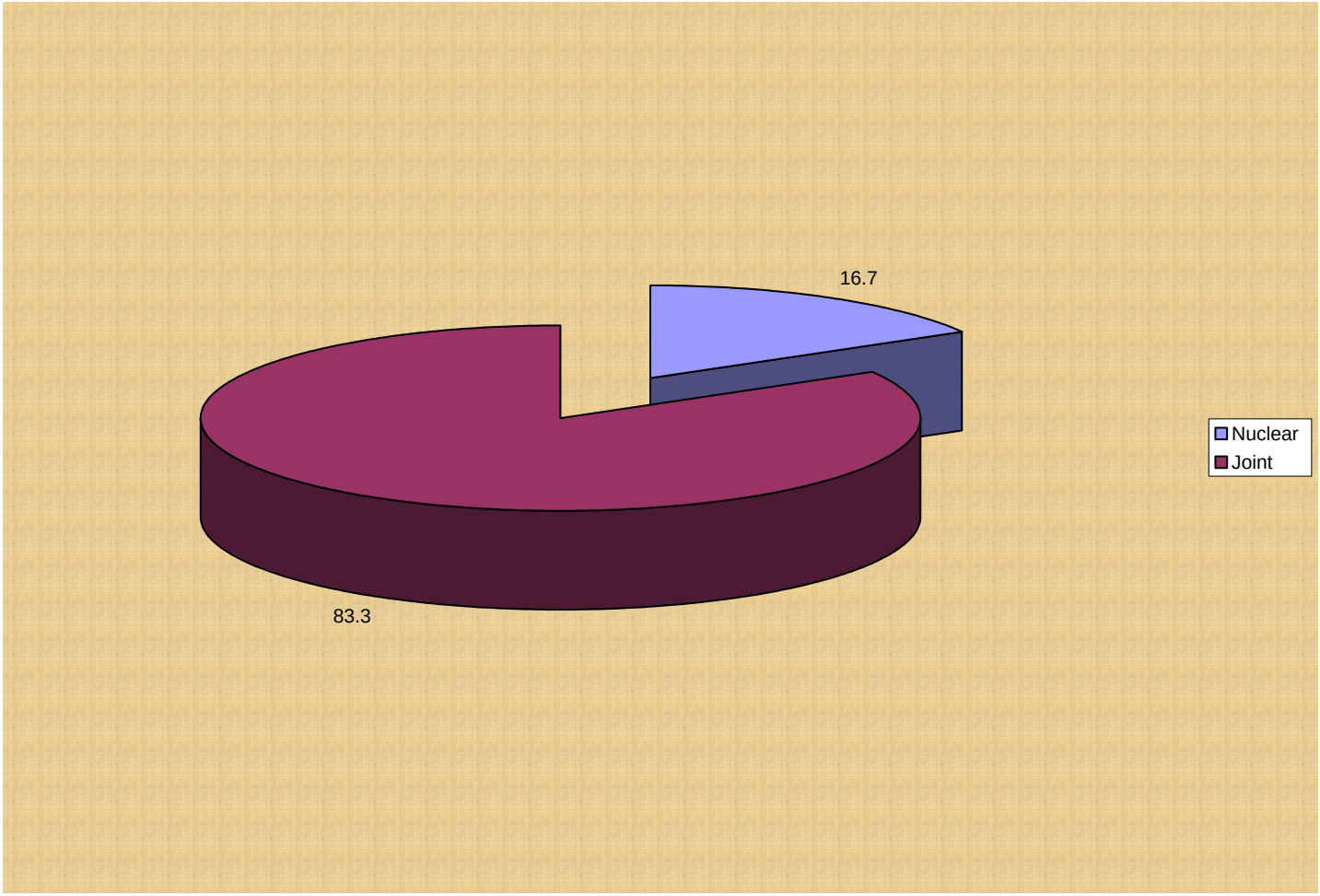


Figure : 6 Distribution of Demographic Variable According to the Type of Family of Patients Receiving chemotherapy.

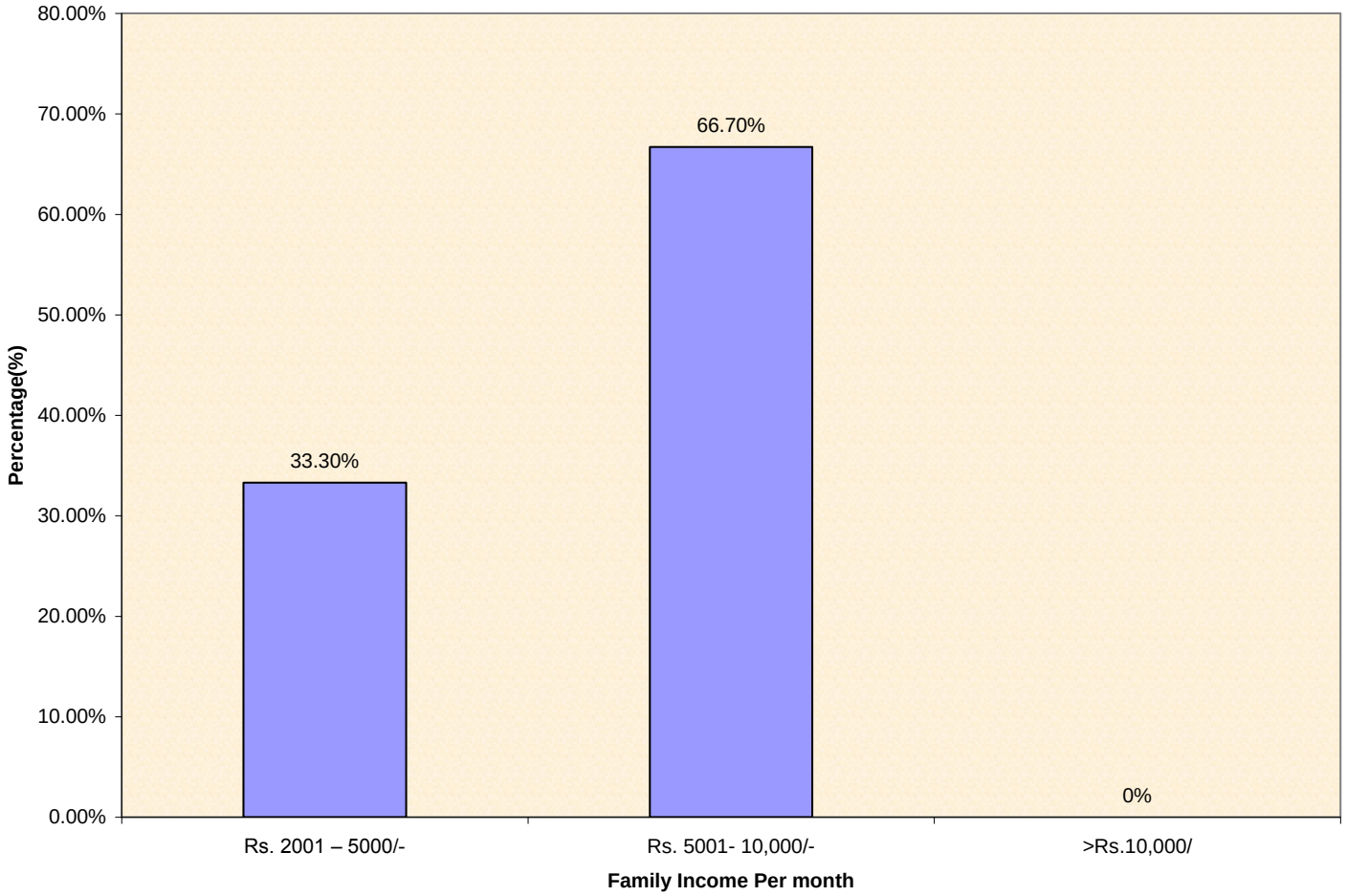


Figure : 7 Distribution of Demographic Variable According to the Type of Family Income per Month of Patients Receiving chemotherapy.

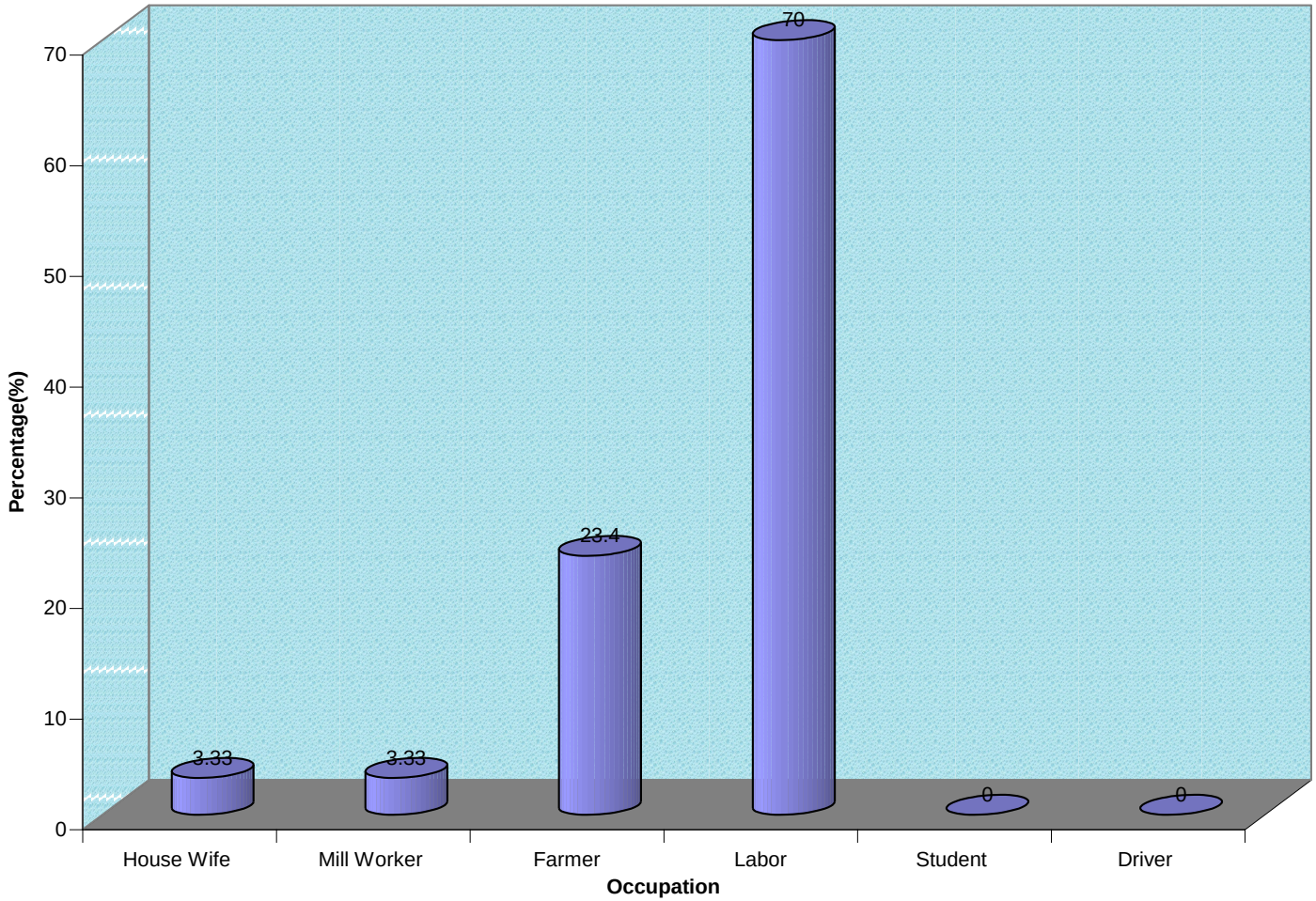


Figure : 8 Distribution of Demographic Variable According to the occupation of Patients Receiving chemotherapy.

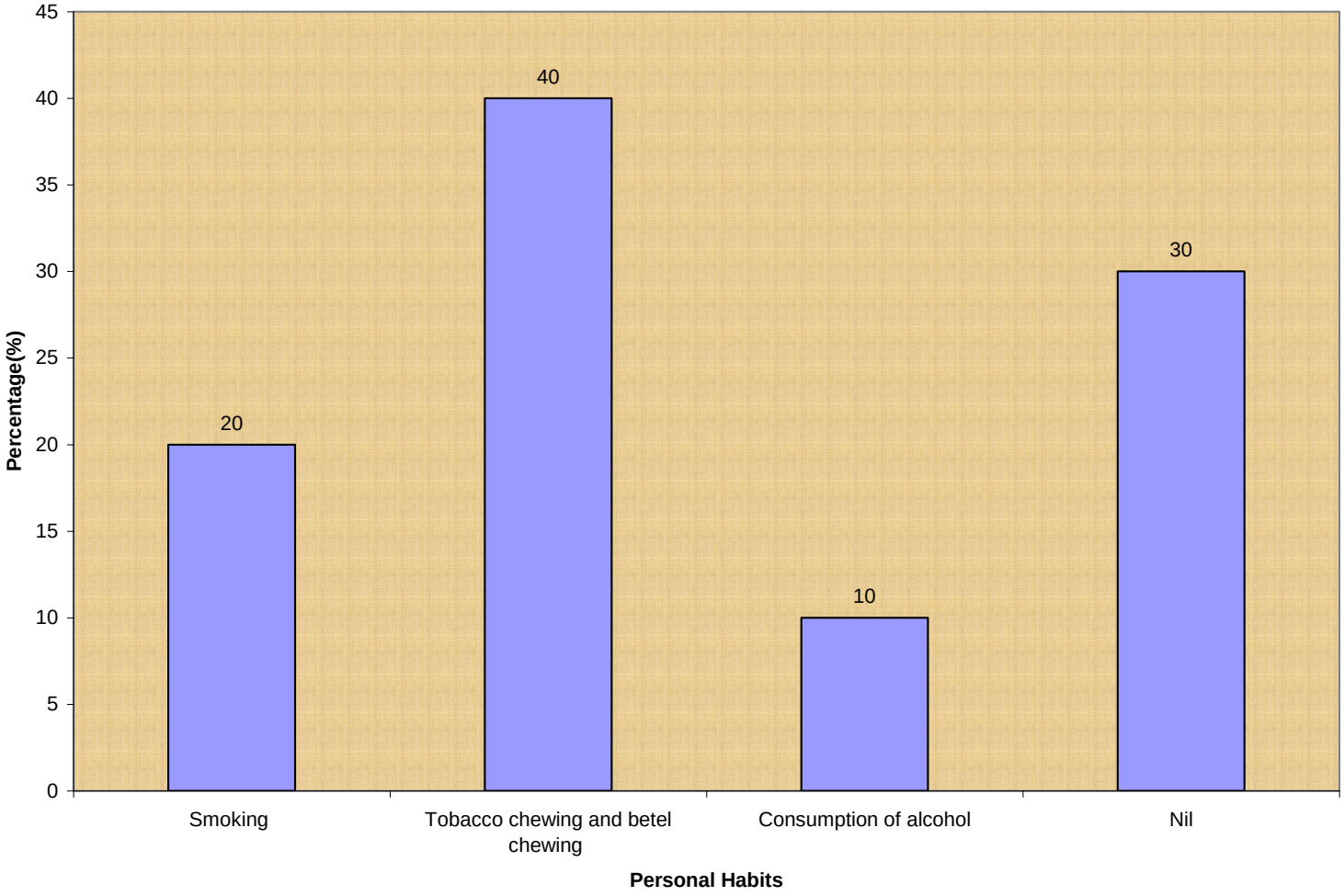


Figure : 9 Distribution of Demographic Variable According to personal Habits of Patients Receiving chemotherapy.

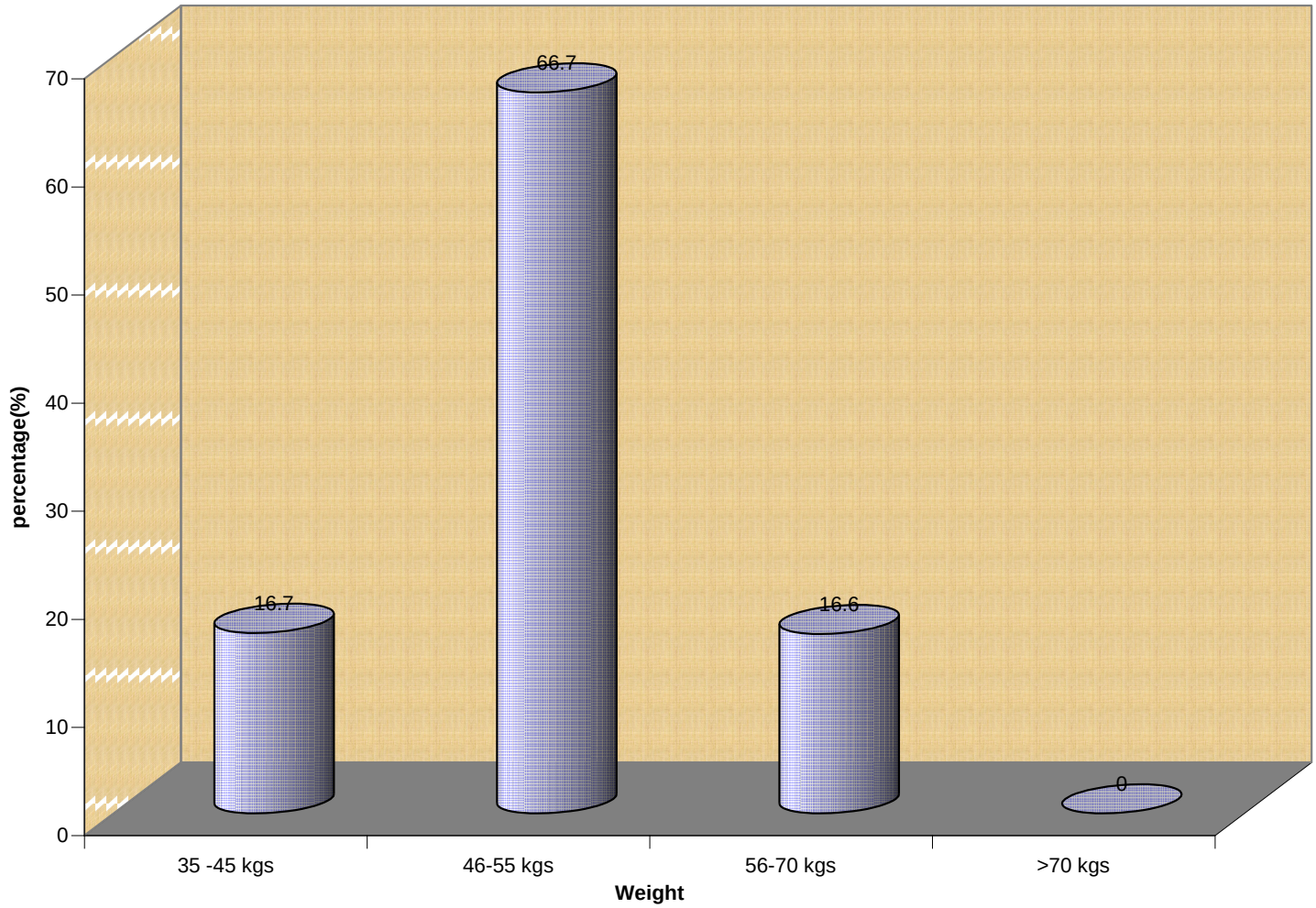


Figure : 10 Distribution of Demographic Variable According to weight of Patients Receiving chemotherapy.

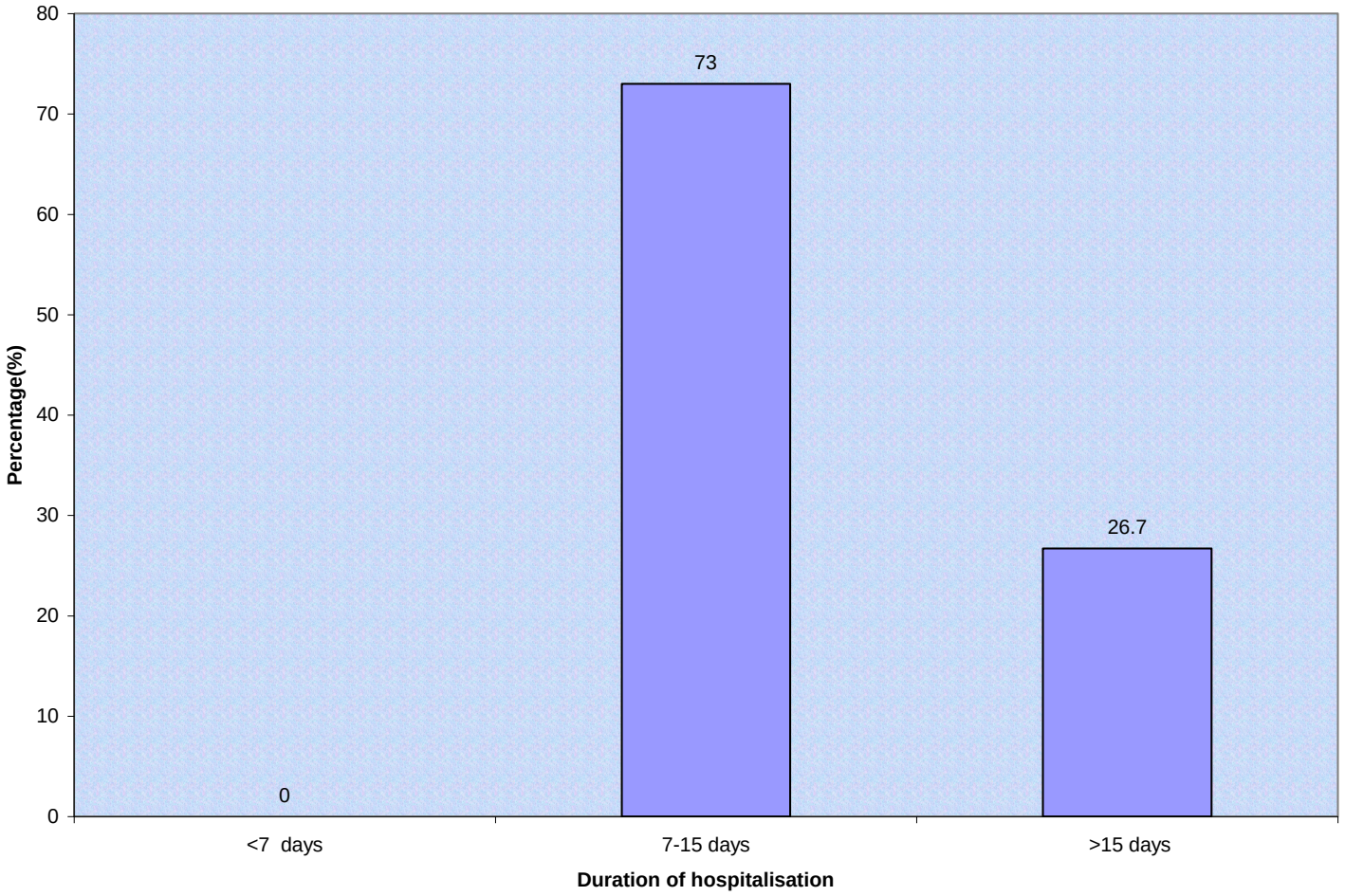


Figure : 11 Distribution of Demographic Variable According to duration of Hospitalization of Patients Receiving chemotherapy.

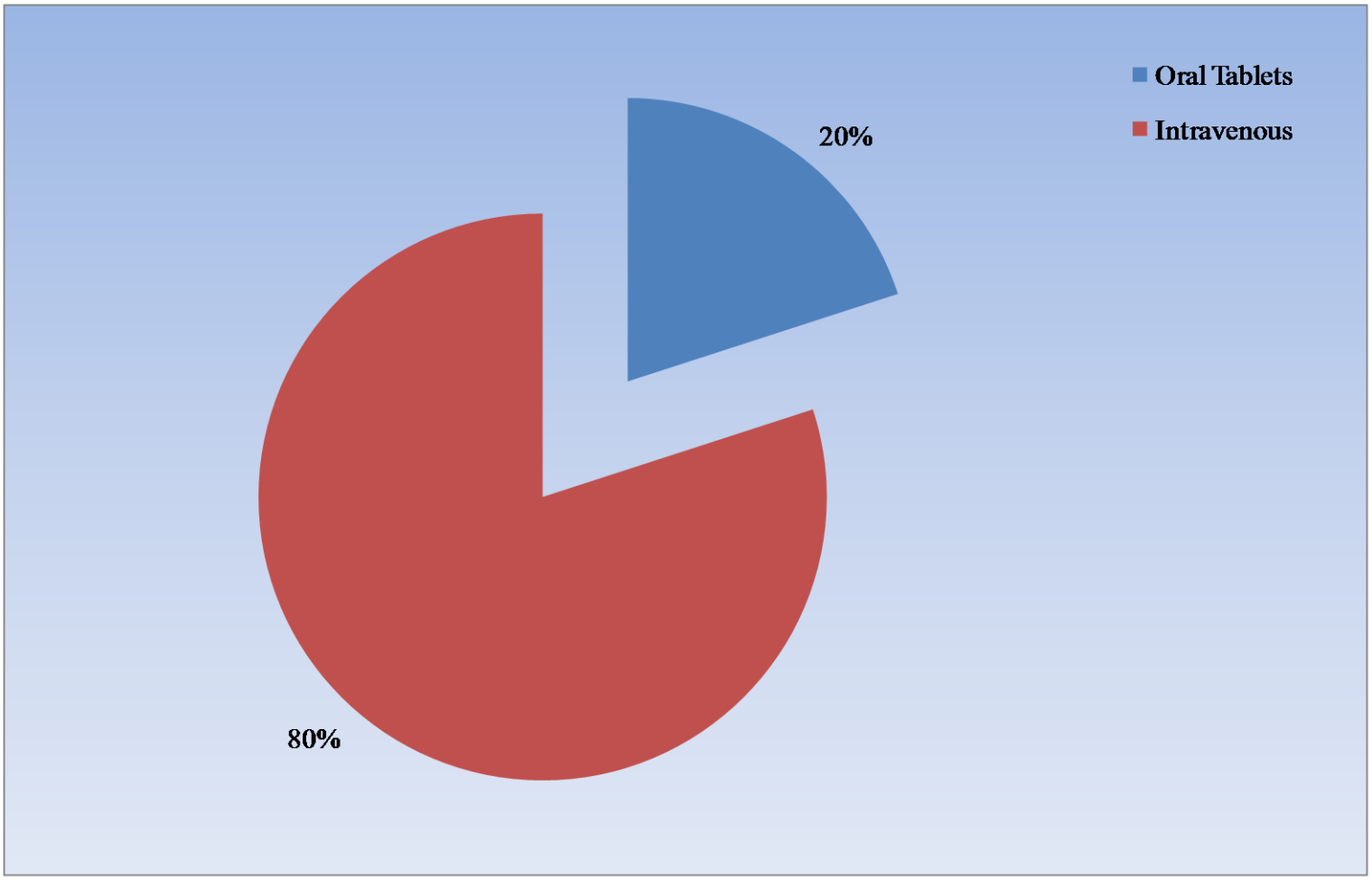


Figure .12 Distribution of Demographic variables according to the type of treatment of patients receiving Chemotherapy

SECTION- II

Description of Statistical of Pretest and Post Test Regarding Mucositis of Patients Receiving Chemotherapy.

(n=30)

S.No	Mucositis	Mean	SD	't' value
1	Pre test	45.13	5.27	25.31 *
2	Post test	24.93	3.2	

* Significant

Table (2) shows the mean pretest score of mucositis was 45.13 and that of post test was 24.93. The calculated 't' value was 25.31 at 29 ((df) was significant at 0.05 level. It shows that oral application of honey has significant effect of minimizing mucositis among patients receiving chemotherapy.

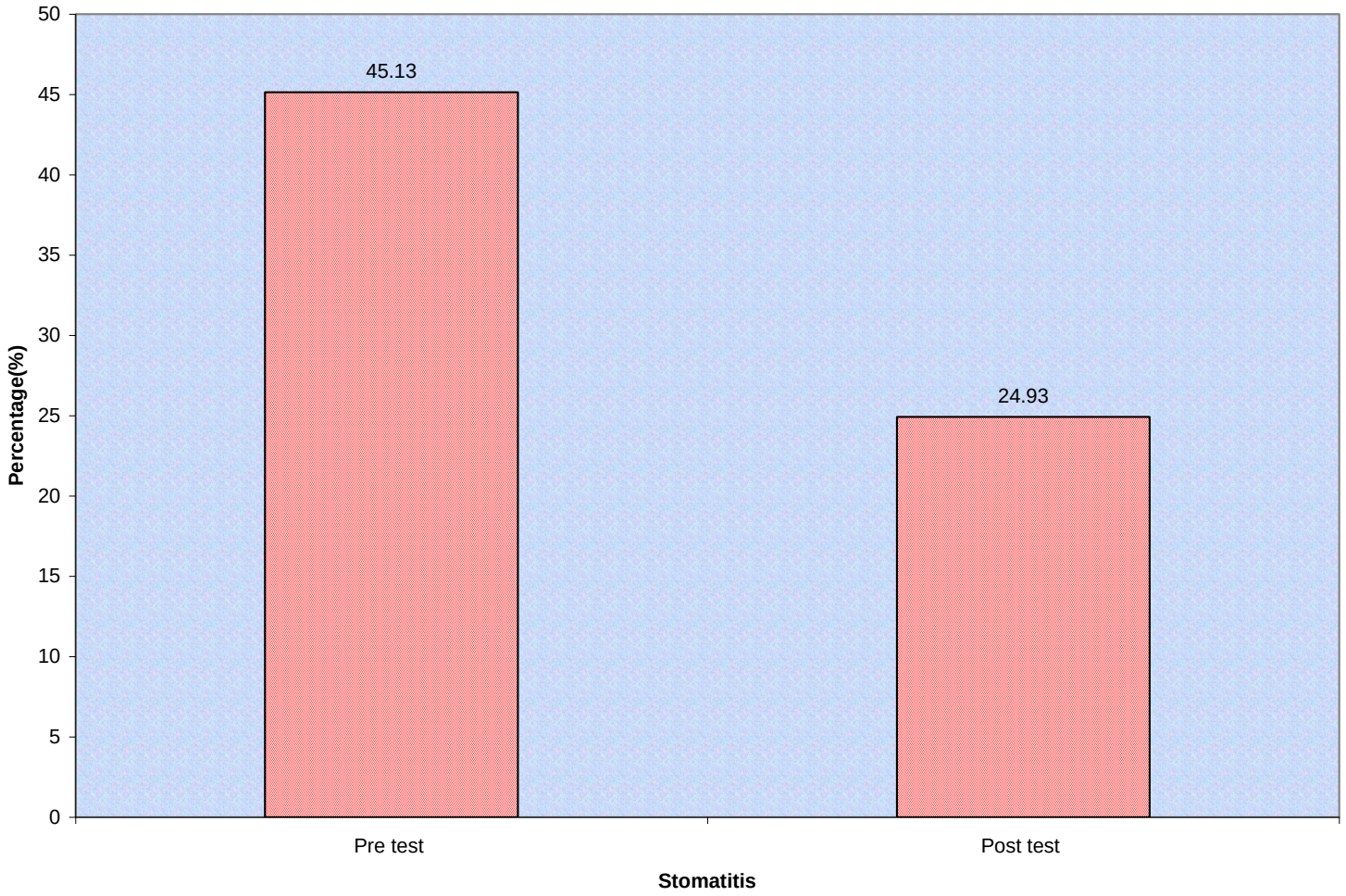


Figure.13 Comparison of Statistical Value of Pretest and Post Test Mean Score Regarding Mucositis of Patients Receiving Chemotherapy.

SECTION – III

Description of Statistical value of pretest and Post Test Means score regarding practice of oral application of Cryotherapy in patients receiving chemotherapy.

Table : 3 Comparison of Mean pretest and post test score regarding application of cryotherapy in patients receiving chemotherapy.

(n=30)

S.No	Mucositis	Mean	SD	't' value
1	Pre test	4.2	0.69	21.03
2	Post test	9.23	1	

- significant

Table (3) shows the mean pre test score of oral hygience was 4.2 and that of post test was 9.23 . The calculated 't' value was 21.03 at 29 (df) was significant at 0.05 level. It highlights that oral application of honey significant effect on minimizing mucositis among patients receiving chemotherapy.

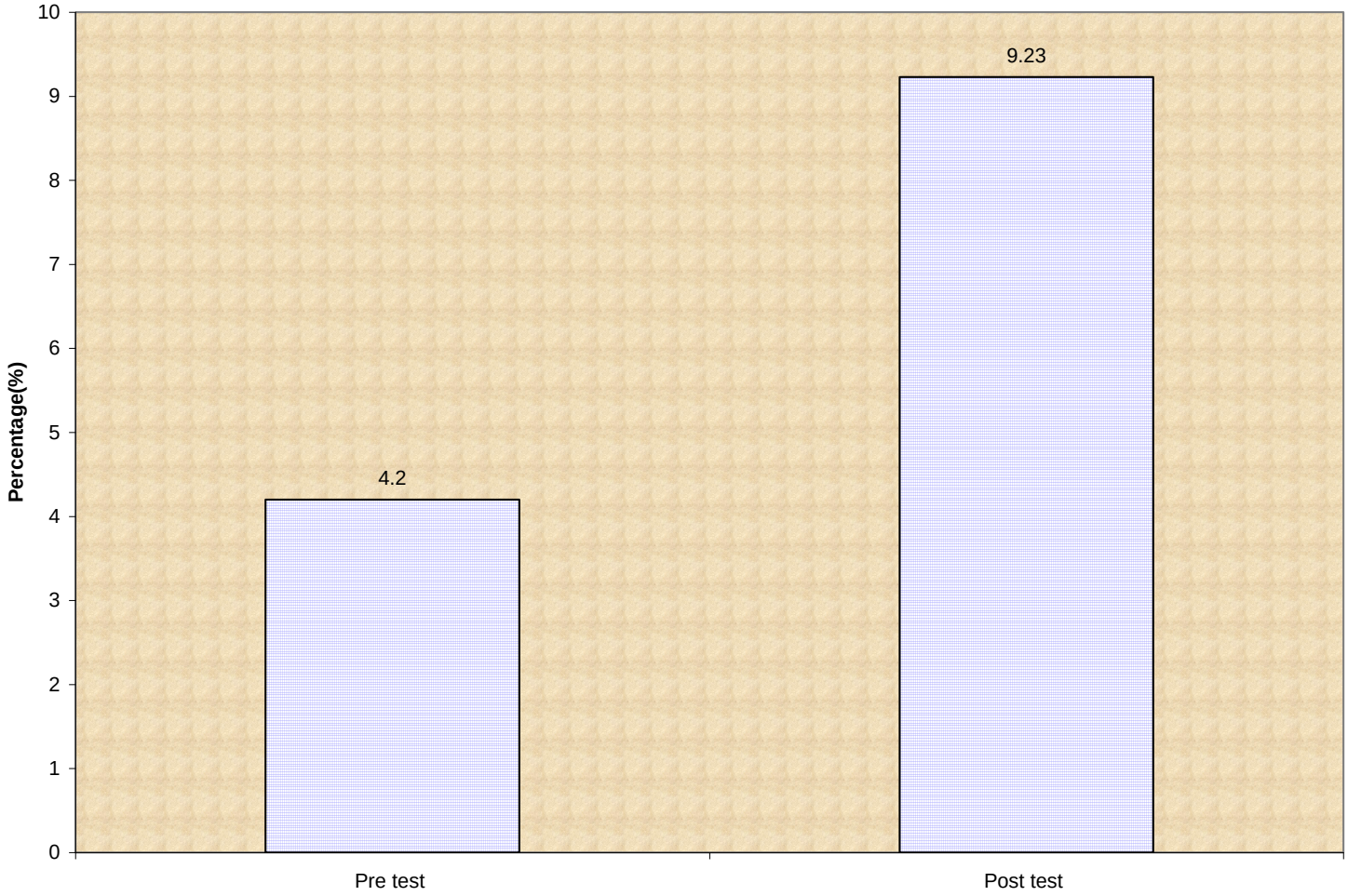


Figure.14 Comparison of Statistical Value of Pretest and Post Test Mean Score Regarding Practice of Oral Application Cryotherapy in Patients Receiving Chemotherapy.

SECTION – IV

Table 4. Description of Demographic Variables with score of Oral mucositis of Patients Receiving Chemotherapy.

(n=30)

S.No	Demographic Variables	Below Mean	Above mean	Df	X^2
1	**Age**				
	a) 18-30 years	0	0		2.864
	b) 31-40 years	0	0	3	
	c) 41-50 Years	8	9		
	d) > 50 years.	8	5		
2	**Sex**				
	a) Male	7	6		0.057
	b) Female	9	8	1	
3	**Education**				
	a) Illiterate	9	3		
	b) Primary	12	5		
	c) Secondary	1	0	4	0.443
	d) Higher Secondary	0	0		
	e) Graduates	0	0		
4	**Family Type**				
	a) Nuclear	2	3	1	0.425
	b) Joint	14	11		
5	**Family Income Per month** a) Rs. 2001 – 5000/- b) Rs. 5001- 10,000/- c) >Rs.10,000/-	 8 8 0	 3 11 0	2	2.628

(Table 4 continued)

6	**Occupation** a) House Wife b) Mill Worker c) Farmer d) Labor e) Student f) Driver	 1 0 6 9 0 0	 0 1 2 11 0 0	5	4.08
7	**Personal Habits** a) Smoking b) Tobacco chewing and betel chewing c) Consumption of alcohol d) Nil	 4 7 0 5	 2 5 3 4	3	3.98
8	**Weight of patient** a) 35 -45 kgs b) 46-55 kgs c) 56-70 kgs d) >70 kgs	 3 11 2 0	 2 9 3 0	3	0.465
9	**Duration of Hospitalization** a) <7 days b) 7-15 days c) >15 days	 0 13 7	 0 9 1	2	2.21
10	**Treatment** a)Oral Tablets b)Intravenous	 3 13	 3 11	1	0.03

Table (4) shows that demographic variables like age, education, occupation, personal habits, type of treatment, duration of hospitalization showed no significant association with oral Mucositis of patients receiving chemotherapy.

CHAPTER –V
RESULTS AND DISCUSSION

The study aimed the effectiveness of oral hygiene and oral application of cryotherapy in minimizing mucositis among patients receiving chemotherapy .Mucositis is a common side effect of cancer treatment which may occur within the first week of treatment. A good hygiene practice and use of alcohol free mouthwash is necessary to prevent mucositis and improve prognosis. Hence it was presumed that providing icec hips and encouraging patients to follow a good oral hygienic practice will minimize mucositis and improve treatment compliance.

This is one group pre test and post test design intended to assess the effectiveness of oral hygienic and oral application of cryotherapy to prevent mucositis among patients receiving chemotherapy .

The First objective of the study was to assess the oral hygiene and degree of mucositis among the patients receiving chemotherapy

A structured questionnaire was used for assessing oral hygiene practice and oral application of cryotherapy and a standard tool was used for assessing mucositis .The mean score of oral application of cryotherapy was 4.2 in pre test and standard deviation score was 0.69.The post mean score of mucositis was 24.93 and standard deviation score was 3.2 .The findings showed that oral hygiene practices were below average and most of them had mild mucositis during initial week of treatment.

The second objective of the study was to provide oral hygiene and oral application of cryotherapy to reduce mucositis among patients receiving chemotherapy

The samples were selected convenient sampling technique with reference to the selection criteria .On the first day the samples were assessed for oral health practices and mucositis by using mucositis assessment scale and questionnaire. Then participants were given cryotherapy and asked them to swallow it after keeping ice chips in the oral cavity for 30minutes.The cryotherapy should be taken with 30minutes before starting 5 minutes before chemotherapy for 6 times a day for 2 weeks .Each day the mucositis was assessed before and after the application of cryotherapy .Post test was done on the 14^{th} day .Pamphlets were distributed to all respondents who participated in the study.

A similar study conducted by Biswal,et.AL,. (2013) assessed the effectiveness of application of cryotherapy and oral hygiene in the management of chemotherapy induced mucositis .The study shows significant reduction in symptomatic grade ¾ mucositis in those patients. Hence cryotherapy is a simple and cost effective treatment in chemotherapy mucositis.

The Third Objective of the Study was to Assess the Effectiveness of Oral Hygiene and Oral Application of Cryotherapy to Reduce Mucositis Among Patients Receiving Chemotherapy

The mean score of pre test practice of oral application of honey was 4.2 and post test was 9.23. The obtained 't' value in practice of oral application of Cryotherapy 21.03. The pre test mean score of Mucositis was 45.13 and post test mean score was oral hygiene and Mucositis were higher than the table value. It implies that there was significant effect of oral hygiene and oral application of Cryotherapy in minimizing Mucositis.

A similar study conducted by Bardy, et.al., (2008) among 40 Mucositis patients for 20 days to assess the effectiveness of oral hygiene and Cryotherapy application on reducing Mucositis. The findings implies that oral hygiene and Cryotherapy was effective in reduction of Chemotherapy induced Mucositis.

The Fourth Objective of the Study was to Associate the Demographic Variables with Effectiveness of Cryotherapy in Reducing Mucositis

The demographic variables namely the age, gender, education, occupation and type of treatment were associated with post test score of oral hygiene and Mucositis. All the variables showed no signification association with post test score of oral hygiene and Mucositis respectively.

CHAPTER – VI

SUMMARY, CONCLUSION, NURSING IMPLICATION, LIMITATIONS AND RECOMMENDATIONS

Summary

This study was conducted to assess the effectiveness of oral hygiene and oral application of Cryotherapy to reduce Mucositis among patients receiving chemotherapy.

The following objectives were set for the study

- To assess the oral hygiene and degree of Mucositis among patients receiving chemotherapy.
- To provide oral hygiene and oral application of Ice Chips to reduce Mucositis among patients receiving chemotherapy.
- To assess the effectiveness of oral hygiene and oral application of Ice Chips to reduce Mucositis among patients receiving chemotherapy.
- To associate the demographic variables with effectiveness of Ice Chips in reducing Mucositis.

The Alternative Hypothesis Set for the Study were as Follows

There is significant difference between pre test and post test scores of oral hygiene and oral application of Ice Chips among patients receiving chemotherapy.

Major Findings of the Study were as Follows

- The pre test mean score of oral Mucositis score was 45.13. The pre test mean score of practice of oral application of Ice Chips was 4.2.
- The post test mean score of practice of oral application of Ice Chips was 9.23.
- The Obtained 't' value of oral Mucositis score was 25.3. It highlighted that Ice Chips has significant effect on minimizing Mucositis among patients receiving chemotherapy
- The obtained 't' value of practice of oral application of Ice Chips was 21.03. It shows that oral application of Ice Chips has significant effect on minimizing Mucositis among patients receiving chemotherapy.

- There was no association between post test oral Mucositis score with demographic variables

Conclusion

Oral hygiene and oral application has significant effect on minimizing Mucositis. The mean score for oral Mucositis in the pre test was 45.13 and post test was 24.93. The calculated 't' value 25.31 was higher than the table value which showed that the oral application of Ice Chips has significant effect on minimizing Mucositis. Hence oral application of Ice Chips has significant effect on minimizing Mucositis among patients receiving chemotherapy.

The mean score of practice of oral application of Ice Chips in the pre test was 4.2 and post test was 9.23. The calculated 't' value was 21.03, which is much higher than the table value. It implies that oral hygiene and oral application of Ice Chips has significant effect on minimizing Mucositis among patients receiving chemotherapy.

Nursing Implications

The findings of the study have implication in various areas of nursing education, practice, administration and nursing research.

Nursing Practice

- The nurses play a vital role in assessing patient's symptoms, initiate prompt measures, educate people about advantages of oral hygiene especially the use of alcohol free mouth wash and abstain from alcoholism and smoking otherwise it will seriously affect cancer therapy and make poor prognosis.

- A variety of patient related factors are responsible for increased potential for developing Mucositis after chemotherapy. It is also said that many acute bacterial infections may follow chemotherapy. Patients with improved oral hygiene and who can abstain from smoking can definitely reduce the incidence and severity of Mucositis.

Nursing Education

- A structured teaching programme must be emphasized in the nursing curriculum. It helps the nursing student to develop an attitude towards the importance of providing health education for the vulnerable group about oral hygiene and prevention of Mucositis.

- Nursing curriculum should emphasis the preventive measures than curative aspects of side effects due to chemotherapy.

- The nursing education consists of knowledge related to health information and appropriate strategy for imparting that knowledge.

Nursing Administration

- Nurse administrators need to organize continuing nursing education programme for the nursing personnel and motivate them to conduct education programme beneficial to patients.

- The administrator involve with other agencies, conduct various educational programme and make oriented with social support groups so that patients are able to manage themselves.

- The nurse administrators co-ordinate their work along with preventive, curative, promotive and rehabilitative aspects of care.

- Nurse administrators should organize in service educational programme in care of patients after chemotherapy.

Nursing Research

- One of the main aims of nursing research is to contribute knowledge to the body of nursing to expand and broaden the scope of nursing. This is possible only if nurses are taking initiative to conduct further research. More research on this area would be beneficial to patients with cancer undergoing antineoplastic therapy.

- Research should be done to find out the various innovative methods for effective teaching of patients to bring out a positive attitude towards health and adopt preventive measures to reduce Mucositis which occurs after chemotherapy.

- The study forms a base for further studies as effectiveness of oral application of Ice Chips and their study will in turn strengthen nursing research pertaining to clinical nursing.

Limitations

- The study was conducted for a small representative group of the whole population in a selected setting. Hence generalization is limited only to the population of cancer patients undergoing chemotherapy at Ashwin hospital:

- Long terms follow up and care was not possible due to limited time.

Recommendations

The study recommends the following for further research

- A comparative study can be performed to evaluate the effectiveness of different oral mouth washes like normal saline, Chlorhexidine, Povidone iodine.

- A similar study can be replicate with a control group on a large scale.

- A similar study can be conducted with a case study approach on oral cancer.

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ABSTRACT

Statement of the Problem : The effectiveness of oral hygiene and oral application of ice chips to reduce Mucositis among patients receiving chemotherapy at Ashwin Hospital, Coimbatore. **Study Objectives :** a) To assess the oral hygiene and degree of Mucositis among patients receiving chemotherapy b) To provide oral hygiene and oral application of Ice Chips to reduce Mucositis among patients receiving chemotherapy. c) To assess the effectiveness of oral hygiene and oral application of Ice Chips to reduce Mucositis among patients receiving chemotherapy d) To find out the association between selected demographic variables with effectiveness of oral application of Ice Chips in reducing Mucositis in patients receiving chemotherapy. **Methodology :** One group pre test post test pre experimental design. The samples for this study consist of 30 patients who receive chemotherapy from Ashwin Hospital Coimbatore, selected by convenient sampling. Oral application of Ice Chips practice questionnaire and Modified Mucositis Assessment Scale was used to assess the Mucositis before and after administering oral application of Ice Chips. **Results:** Descriptive and inferential statistics were used to analyze the values. The obtained 't' value for Mucositis was 5.26 and that for oral application of Ice Chips practice questionnaire was 5.21. It shows that oral hygiene and oral application of Ice Chips had significant effect on reducing Mucositis. **Conclusion :** This study showed an improvement in oral hygiene and reduced the incidence of Mucositis.

PPG COLLEGE OF NURSING

(A Unit of P. Perichi Gounder Memorial Charitable Trust)

An ISO 9001 : 2008 Certified Institution

Affiliated to The Tamilnadu Dr. MGR Medical University, Chennai

Recognised by Indian Nursing Council, New Delhi. (Cr. No. : 18-1183/2000, INC Resl. No.172) and Tamilnadu Nursing Council, Chennai.

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✆ : 0422 - 2669000 Fax : 0422 - 2669333 E-mail : ppgcollege@gmail.com **Website : www.ppg.edu.in**

To

Through

The Principal,

PPG College of Nursing

Coimbatore – 35.

Respected Sir/Madam,

Sub: Seeking Permission for conducting research study

I am a student of M.Sc Nursing in PPG College of Nursing. Our College is affiliated to the Tamilnadu Dr.M.G.R Medical University, Chennai. I have taken the specialization in Medical Surgical Nursing

Topic : A STUDY TO ASSESS THE EFFECTIVENESS OF ORGAL HYGIENE AND ORAL APPLICATION OF CRYOTHERAPY TO REDUCE MUCOSITIS AMONG PATIENTS RECEIVING CHEMOTHERAPY AT ASHWIN HOSPITAL, COIMBATORE.

I request you to kindly permit me to conduct my study in hospital. Hope you will consider my requisition and do the needful.

Thanking you,

Date : Yours Sincerely,

Place :

REQUISITION LETTER FOR CONTENT VALIDITY

From

M.Sc (N) II Year,
PPG College of Nursing,
Coimbatore - 35.

To

Through : Principal, PPG College of Nursing

Respected Sir/Madam,

Sub : Requisition for expert opinion and suggestion for content validity of tool.

I am a student of M.Sc (N) II year, PPG College of Nursing affiliated to the Tamilnadu Dr. M. G. R. Medical University, Chennai. As a partial fulfillment of the M.Sc (N) programme. I am conducting.

A STUDY TO ASSESS THE EFFECTIVENESS OF ORAL HYGIENE AND ORAL APPLICATION OF CRYOTHERAPY TO REDUCE MUCOSITIS AMONG PATIENTS RECEIVING CHEMOTHERAPY AT ASHWIN HOSPITAL, COIMBATORE.

Herewith I have enclosed the developed tool for content validity and for the expert opinion and possible solution. It would be very kind of you to return the same as early as possible.

Thanking you,

Yours faithfully,

PPG COLLEGE OF NURSING
FORMAT FOR THE CONTENT VALIDITY

Name of the expert :

Address :

Total content for the tool :

Kindly validate each tool and tick wherever applicable

S.No	No.of Tool/ Section	Strongly agree	Agree	O.K	Not Applicable	Need Modification	Remarks

Remarks

Signature of the Expert with Date

LIST OF EXPERTS

1.Dr.PADMAJA.,M.D.,
Department of Medicine,
Ashwin Hospital,
Coimbatore.

2.Prof.KUZHANTHAVEL
KMCH College of Nursing,
Coimbatore.

3.Prof. FUELA
Sri Ramakrishna College of Nursing,
Coimbatore.

4.Prof. K.RAJI
Vice Principal,
K.G.College of Nursing,
Coimbatore.

5.Prof. KAVITHA
Vice Principal,
Ganga College of Nursing,
Coimbatore.

6.Prof. B. LAVANYA
Principal,
BRS College of Nursing,
Punjab.

SECTION – A

Demographic Variables

Characteristics Options

1. Sample No._____

2. Age
   a) 18 – 30 Year ☐
   b) 31 – 40 Year ☐
   c) 41 – 50 Years ☐
   d) > 50Years ☐

3. Sex
   a) Male ☐
   b) Female ☐

4. Education
   a) Illiterate ☐
   b) Primary ☐
   c) Secondary ☐
   d) Higher Secondary ☐
   e) Graduates ☐

5. Family Type
   a) Nuclear ☐
   b) Joint ☐

6. Family Income per month
   a) Rs.2001 – 5000/- ☐
   b) Rs.5001 – 10,000/- ☐
   c) > Rs.10,000/- ☐

7. Occupation

a) House Wife ☐
b) Mill Worker ☐
c) Farmer ☐
d) Labour ☐
e) Student ☐
f) Driver ☐

8. Personal Habits

e) Smoking ☐
f) Tobacco and betal chewing ☐
g) Consumption of alcohol ☐
h) Nil ☐

9. Weight of the Patient

a) 35 – 45 kg ☐
b) 46 -55 kg ☐
c) 56 – 70 kg ☐
d) > 70 Years ☐

10. Duration of Hospitalization

i) 7 days ☐
j) 7 – 1 days ☐
k) > 15 days ☐

11. Method of Treatment

l) Oral tablets ☐
m) Intravenous ☐

SECTION – B

MUCOSITIS ASSESSMENT SCALE

Name :

ORGAN	CHARACTER	1	2	3	4
LIPS	Texture Colour Moisture	Soft Pink Moist	Wrinkled Red Dry	Rough Once or more reddened area Swollen	Bleeding Inflamed, Reddened Cracked/Very dry
TONGUE	Texture Colour Moisture	Firm Smooth Papillae Pink Moist	Papillae Prominent at base Lingual groove depended Pink with reddened Areas Slightly dry	Papilla all over Tongue-raised Tip and papillae red except coated areas Dry & Swollen	Ulcerated, Fissured, Blistered Entire tongue bright red except coated area. Engorged, dry with indention
MUCOUS	Texture Colour Moisture	Smooth Pink . Moist	Thin and fragile Pale Slight dry	Cracked Red and inflamed White coating Dry and Swollen	Ulcerated, Blistered. Bright red, white, yellow or brown spots. Edematous

GUMS	Texture Colour Moisture	Smooth Pith . Moist	Rough Pale with one or more Reddened area Slightly dry	Occasional lesions blister Red Swollen, dry	Ulcerated bleeding . Bright red and shiny white spots. Edematous
SALIVA VOICE ABILITY TO SWALLOW		Thin, Watery Normal tone And quality No difficulty	Thin, more amount felt by client Deeper Slight difficulty	Scanty, Mouth dry Deep Pain	Salvia, thick viscid Difficulty Speaking
TEETH	Shine Debris Amount Dentures	Shiny No debris Full mouth Not using / Well fitting	Slight Dull Slight Debris ≥/4 of teeth lacking Slightly loose	Dull Debris ½ of enamel ≥l/2 of teeth lacking Ill-fitting	Very Dull Covered with debris Not teeth Unable to wear.

SECTION - C

Questionnaire to Assess the Practice of Cryotherapy Application in Clients in Mucositis After Chemotherapy

S.No.	Content	Pre Test		Post Test	
		Yes	No	Yes	No
1.	Do you have the habit of brushing your teeth after every meal?				
2.	Do you observe your lips, cheeks, gums and tongue for redness or blisters daily?				
3.	Do you think that ice chips is having anti inflammatory activity?				
4.	Do you think ice chips stimulates new tissue growth?				
5.	Do you think ice chips helps to retain moisture?				
6.	Do you think Mucositis can be reduced by taking ice chips by orally?				
7.	Do you break the ice cubes before keeping orally?				
8.	Do you take ice chips at least 6 times a day in order to reduce Mucositis?				
9.	Do you take ice chips before 30 minutes and 5 minutes before or after food ?				
10.	Do you think Mucositis can be reduced by keeping ice chips in the oral cavity for 30minutes ?				
11.	Do you swallow ice chips after 30 minutes?				
12.	Do you take ice chips compulsory before chemotherapy				

PART – C

Answer Key

S.No.	Answer	Score
1.	Yes	1
2.	Yes	1
3.	Yes	1
4.	Yes	1
5.	Yes	1
6.	Yes	1
7.	Yes	1
8.	Yes	1
9.	Yes	1
10.	Yes	1
11.	Yes	1
12.	Yes	1

பகுதி – அ

முறையான நேர்காணல் படிவம்

1. மாதிரி எண் : .....

2. வயது

   அ. 18 – 30 வருடம் ☐

   ஆ. 31 – 40 வருடம் ☐

   இ. 41 – 50 வருடம் ☐

   ஈ. > 50 வருடம் ☐

3. பாலினம்

   அ. ஆண் ☐

   ஆ. பெண் ☐

4. கல்வி

   அ. படிப்பில்லாதவர் ☐

   ஆ. முதல்நிலை ☐

   இ. இரண்டாம் நிலை ☐

   ஈ. மேல்நிலை ☐

   உ. பட்டதாரி ☐

5. குடும்ப வகை

   அ. தனிக்குடும்பம் ☐

   ஆ. கூட்டுக்குடும்பம் ☐

6. குடும்பத்தின் மாத வருமானம்

   அ. ரூ.2001 – 5000 ☐

   ஆ. ரூ.5001 – 10,000 ☐

   இ. > ரூ.10,000 ☐

7. தொழில்

அ. இல்லத்தரசி ☐

ஆ.தொழிலாளி ☐

இ. விவசாயி ☐

ஈ.கூலி ☐

உ.மாணவர் ☐

ஊ.ஓட்டுனர் ☐

8. பழக்கவழக்கங்கள்

அ. புகைப்பிடிப்பது ☐

ஆ. புகையிலை மற்றும் வெற்றிலை போடுவது ☐

இ. குடிப்பழக்கம் ☐

ஈ.ஒன்றுமில்லை ☐

9. நோயாளியின் எடை

அ. 35 – 45 கி.கி ☐

ஆ. 46 – 55 கி.கி ☐

இ. 56 – 76 கி.கி ☐

ஈ. > 70 கி.கி ☐

10. மருத்துவமனையில் உள்ள கால இடைவேளை

அ. 7 நாட்கள் ☐

ஆ. 7 – 15 நாட்கள் ☐

இ. > 15 நாட்கள் ☐

11. கீமோதெரபி சிகிச்சை முறைகள்

அ. மாத்திரைகள் மூலம் ☐

ஆ ஊசிகள் மூலம் ☐

பகுதி - ஆ

கீமோதெரபி சிகிச்சைக்குபின் ஏற்படும் வாய்புண் நீர்கட்டி தடவுவதன் மூலம் குறைந்துள்ளதா என்று நோக்க உதவும் கேள்விகள்

வ. எண்	வினாக்கள்	சிகிச்சைக்கு முன்		சிகிச்சைக்கு பின்	
		ஆம்	இல்லை	ஆம்	இல்லை
1.	உணவு அருந்திய பின் உங்கள் பல்லை துலக்கும் பழக்கம் உள்ளதா?				
2.	தினமும் நீங்கள் உங்கள் உதடு, கன்னம், ஈறு மற்றும் நாக்கு நிறம் மாறியுள்ளதா அல்லது கொப்பளம் உள்ளதா என்று கவனிப்பீர்களா?				
3.	நீர்கட்டி ஒரு நுண்ணுயிர் கொல்லி என்று நினைக்கிறீர்களா?				
4.	நீர்கட்டி திசுவின் வளர்ச்சி நிலை தூண்டுகிறது என்று நினைக்கிறீர்களா?				
5.	நீர்கட்டி ஈரபதத்தை நிலைநிறத்துகிறது என்று நினைக்கிறீர்களா?				
6.	நீர்கட்டி எடுத்துக் கொள்வதால் வாய் புண் குறையும் என்று நினைக்கிறீர்களா?				
7.	நீர்கட்டி 6 முறைள் ஒரு நாளைக்கு எடுத்துக்கொள்ளும் போது வாய்ப்புண் குறையும் என்று நினைக்கிறீர்களா?				
8.	நீர்கட்டி வாயில் வைப்பதற்கு முன் நீர்கட்டியை தூளாக்க வேண்டும் என்று நினைக்கிறீர்களா?				
9.	உணவு அருந்திய பிறகு 30 நிமிடம் உணவு அருந்தாமல் நீர் கட்டியை வாயில் வைக்கலாம் என்று நினைக்கிறீர்களா?				
10.	நீர் கட்டியை 30 நிமிடங்கள் வாயில் வைத்திருப்பதால் வாய்ப்புண் குணமாகும் என்று நினைக்கிறீர்களா?				
11.	30 நிமிடம் கழித்து நீர் கட்டியை விழுங்கலாம் என்று நினைக்கிறீர்களா?				
12	நீர்கட்டியை கண்டிப்பாக தொடங்குவதற்கு முன்பாக எடுக்கவேண்டுமா				

பகுதி - ஆ

மதிப்பெண்

வ.எண்.	பதில்	மதிப்பெண்
1.	ஆம்	1
2.	ஆம்	1
3.	ஆம்	1
4.	ஆம்	1
5.	ஆம்	1
6.	ஆம்	1
7.	ஆம்	1
8.	ஆம்	1
9.	ஆம்	1
10.	ஆம்	1
11.	ஆம்	1
12.	ஆம்	1

PROCEDURE MANUAL

Central Objective

Clients are able to gain knowledge and attitude regarding prevention of Mucositis and take appropriate measures.

Specific Objective

Clients will be able to,

- define Mucositis
- list down the etiological factors
- enumerate risk factors
- explain the pathophysiology
- explain the prevention and management

Introduction

Cancer! To far too many people, the word means death. Previously people thought cancer was incurable. But today research and technology, along with advances in diagnosis and treatment, have helped cure cancer in many. Cancer is a collective term describing a large group of diseases characterized by uncontrolled growth and spread of abnormal cells. Mucositis is one of the most common side effects of chemotherapy or radiation therapy. A healthy oral and GI mucosa is of significant value for emotional expression, verbal communication, elimination and fluid and electrolyte balance. So preventing or reducing Mucositis is having a great significance in patients receiving chemotherapy or radiation therapy.

Mucositis

Mucositis is one of the most common side effects of chemotherapy. Mucous membrane line the alimentary canal from the lips to the anus, participating in functions of digestion, absorption of food and fluids and elimination of waste products.

Definition

Mucositis is a direct consequence of damage to the dividing cells in the basal layer of oral mucosa, which inhibits replacement of superficial layer of cells.

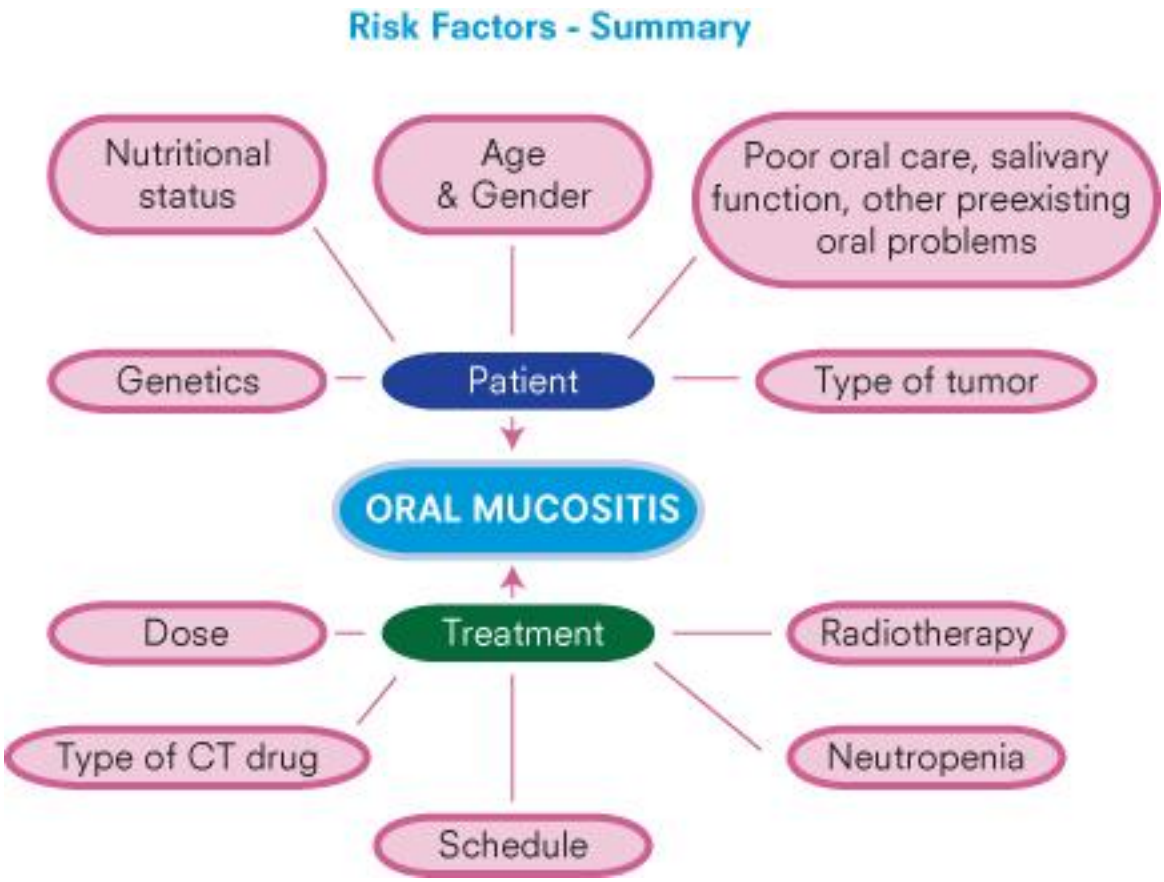
(Lewis, 2009)

Etiology

Mucositis is a consequence of two major mechanisms

- Direct toxicity due to treatment
- Myelo suppression that results from therapy

The non specific effect of cytotoxic drugs used in therapy reduces the rate of epithelial cell renewal, leading to muscle atrophy, localized mucosal ulcers and inflammation.



Pathophysiology

The pathaphysiology of Mucositis was described under four phases

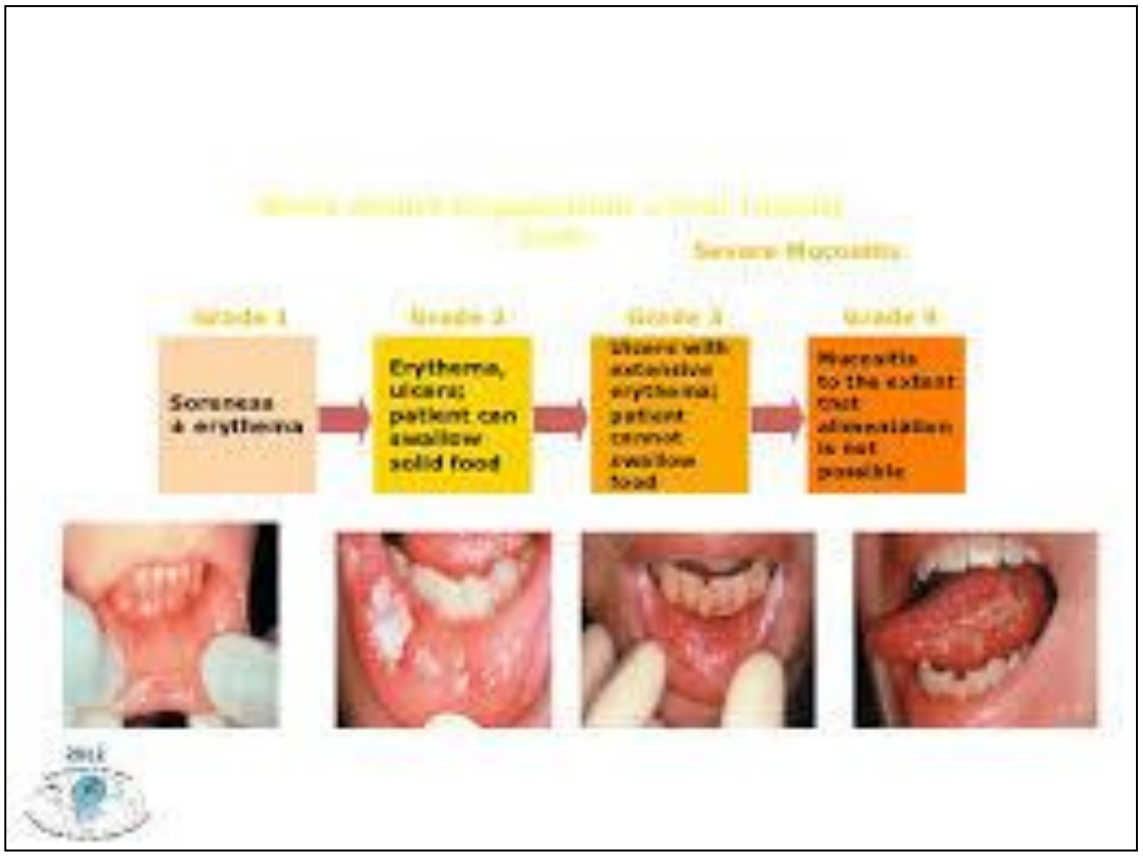
- Vascular or inflammatory phase
- Epithelial phase
- Ulcerative or bacteriological phase
- Repair phase

During the **first phase**, pro inflammatory cytokines are produced and mediate a local response to therapy followed by cell damage The dynamic biological changes results in injury to mucosa, frequently presenting as ulcers.

The **second phase** is related to the previous model of direct stomatotoxicity m which cytotoxic agents inhibit the replication of epithehal basal cells, leading to reduced capability for tissue removal.

The third phase (ulcer with infection) derives from trauma on the epithelium, which is thinner and atrophic due to chemotherapy.

The repair phase takes place after 2 to 3 weeks in non myelosuppressed patients that receive no further therapy.



Prevention and Management

A healthy oral and GI mucosa is of significant value for emotional expression, verbal communication, nutrition, elimination and fluid and electrolyte balance.

Treatment options for Mucositis

- Educate patient regarding chemotherapy induced mucositis, its assessment, prevention, management
- Advice the patients to take small frequent diet
- Advice to avoid hot foods
- Advice to avoid fried foods
- Milk shakes which have high proteins can be encouraged
- Advised to use straw, which will help to avoid direct contact with affected portion
- Advised not to talk while food is in mouth
- Advice to avoid acidic foods like tomatoes, apples, grapes, alcohol, tobacco, lemon, orange etc
- Advice to rinse mouth with water before and after meal and at bed time
- Oral hygiene and application of honey are also treatment options for Mucositis

Oral Hygiene Program

It is very important because inadequate oral care can lead to life threatening infections.

- For oral care use soft brush with sweeping motion from gingiva towards crown of teeth Use horizontal motion for top surface of teeth.
- Cleanse the oral cavity well after meals and at bed time using mouth wash
- Remove prosthesis during procedure, brush and clean and keep in water while outside the mouth.
- Avoid irritants – alcohol, spicy foods, lemon, citrus fruits, poorly fitting dentures.

Purpose of Cryotherapy

- The goal of cryotherapy to freeze and destroy the targeted skin growth while preserving the surrounding tissue from injury.
- Helps to destroy a precancerous lesion and malignant lesion
- To induce temporary vasoconstriction
- To reduce blood flow and chemotherapy delivery to oral mucosa.

Indications

- To reduce Mucositis after chemotherapy
- To remove halitosis.
- To relief oral conditions resulting from chemotherapy
- To clear infection from wounds.

Pre Procedure Care

Articles Needed

A tray containing

- Bowel with Ice Chips
- spoon

Preparation of the Patient

- Explain procedure to the patient.
- Check the oral cavity of the patient for the presence of Mucositis.
- Assess the grade of Mucositis by using standardized modified Mucositis assessment scale.
- Provide oral Hygiene.

Procedure

Amount	:	Ice Chips
Time	:	30 Minutes
Duration	:	6 times a day

Ice Chips are given before 30 Minutes starting 5 Minutes, Before the beginning of the Chemotherapy. After that it should be swallowed. The same procedure can be done 6 times a day. This will help to reduce Mucositis related to chemotherapy.

After Care of the Patient

After application of Ice chips for two weeks assess the patient using the same Mucositis assessment scale to know whether Mucositis is reduced or not.

Conclusion

Cancer and its treatment is very important now a days. Cancer treatment has many side effects and proper assessment of these side effects and according to assessment proper management and prevention of side effects is essential for patients in maintaining a healthy living.

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செய்முறை விளக்கம்

பொதுவான குறிக்கோள்

கீமோதெரபி எடுப்பவர் வாய்புண்ணை தவிர்ப்பது குறித்த அறிவையும் மனப்பான்மையையும் மேற்கொள்வர்.

சிறப்பு நோக்கம்

- வாய்ப்புண்ணை வரையறுத்தல்
- வாய்புண் வருவதற்கான காரணிகளை பட்டியலிடுக.
- வாய்புண் நோய் உண்டாகும் விதத்தை விளக்குக.
- வாய்புண்ணை தடுப்பது குறித்தும் அதை சரிசெய்வது குறித்தும் விளக்குக.

முன்னுரை

பல மனிதர்களிடம் புற்றுநோய் என்பது இறப்பினை குறிப்பதாகும். பண்டைய காலத்தில் மக்கள் புற்றுநோய் குணமடையாது என்று நினைத்தார்கள். ஆனால் இன்று ஆராய்ச்சிகளாலும், தொழில்நுட்ப வளர்ச்சிகளாலும் இதனோடு நோயினை கண்டறியும் முறைகளாலும் மற்றும் சிகிச்சைகளாலும் புற்றுநோயை குணப்படுத்தமுடியும். புற்றுநோய் என்பது பல நோய்களின் கூட்டு இயல்புகளாகும். அவைகள் தடுக்கமுடியாத வளர்ச்சி மற்றும் அசாதாரண செல் வளர்ச்சியாகும். கீமோதெரபி சிகிச்சை முறையின் ஒரு பக்க விளைவு வாய்ப்புண் ஒருவரின் உணர்ச்சி வெளிப்பாடு, பேசுதல், கழிவுநீக்கம் ஆகியவை ஆரோக்கியமான வாய் மற்றும் உணவுபாதையைப் பொறுத்தது. அதனால் கீமோதெரபி முறையால் வரும் வாய்ப்புண்ணை தவிர்க்க வேண்டும்.

வாய்ப்புண்

வாய்ப்புண் என்பது கீமோதெரபி சிகிச்சை அல்சரால் வரும் ஒரு பக்கவிளைவாகும். உணவு பாதையில் உள்ள கோழை சவ்வு உதட்டில் தொடங்கி மலவாய் வரை உள்ளது. இது உணவு செரிமானம் நம் செரிமானம் உணவை மற்றும் நீரை உள்ளிழுத்தல் மற்றும் கழிவை வெளியேற்றுதலுக்கு உதவுகிறது.

வரையறை

வாய்ப்புண் என்பது வாய்சவ்விலுள்ள செல்களில் ஏற்படும் குறைபாடு.

வாய்ப்புண் 2 செயல்களையுடையது

1. சிகிச்சையால் நேரடியான பக்க விளைவுகள்
2. கீமோதெரபி சிகிச்சையால் மையலின் செல் வளர்ச்சி குறைகிறது.

நோய் உண்டாகும் விதம்

வாயில்புண் உண்டாதல் பல படிகளில் உண்டாகிறது.

1. வீக்கம்
2. எப்திலீயல்
3. புண் மற்றும் பாக்டீரியா
4. சரிசெய்தல்

படி 1

இந்த படியில் சிகிச்சையால் உடனடியாக செல் பாதிப்பு ஏற்படுகிறது. இந்த பாதிப்பால் வாயிலுள்ள சுவர்களில் புண் ஏற்படுகிறது.

படி 2

இந்த படியில் எப்திலிய செல் குறைவதால் பாதிக்கப்பட்ட செல்களை போக்குவதில் குறைபாடு ஏற்படுகிறது.

படி 3

கீமோதெரபி சிகிச்சையால் எப்திலிய செல் மெல்லியதாகவும், அளவு குறைந்தும் காணப்படுகிறது.

படி 4

இரண்டு முதல் மூன்று வாரங்களுக்கு பின் திசுக்கள் பழைய நிலைக்கு திரும்பிவிடும்.

தடுப்பு முறைகள் மற்றும் கட்டுப்படுத்தும் முறை

ஒருவரின் உணர்ச்சி வெளிபாடு, பேசுதல், கழிவுநீக்கம் ஆகியவை ஆரோக்கியமான வாய் மற்றும் உணவு பாதையை பொறுத்தது.

வாய்புண்ணுக்கான சிகிச்சைமுறைகள்

கீமோதெரபியினால் ஏற்படும் வாய்ப்புண் மற்றும் அதை தடுக்கும் முறைகள் பற்றி நோயாளிகளுக்கு கற்றுத்தர வேண்டும்.

- நோயாளிகளை உணவை குறைந்த அளவு இடைவெளிவிட்டு சாப்பிடுமாறு ஆலோசனை கொடுக்க வேண்டும்.
- சூடான பானங்களை தவிர்க்க வேண்டும்.
- பொறிக்கப்பட்ட உணவுகளை தவிர்க்க வேண்டும்.
- புரதம் நிறைந்த பால் பொருட்களை சாப்பிடுவதற்கு உற்சாகப்படுத்த வேண்டும்.
- உறிஞ்சு குழாயை உபயோகப்படத்தி குடிப்பதால் உணவு பொருட்கள் நேரடியாக புண்கள் மேல் விழுவதை தவிர்க்கலாம்.
- வாயில் உணவு உள்ளபோது பேசக்கூடாது.
- புளிப்பு தன்மையுடைய தக்காளி, ஆப்பிள், திராட்சை, மது, புகையிலை, எலுமிச்சை, ஆரஞ்சு போன்றவற்றை சாப்பிடுவதை தடுக்க வேண்டும்.
- சாப்பிடுவதற்கு முன்பும், சாப்பிட்ட பிறகும், உறங்குவதற்கு முன்னும் வாயை சுத்தப்படுத்த வேண்டும்.
- வாய்ப்புண்ணிற்று வாய் சுகாதாரம் மற்றும் தேன் உபயோகப்படுத்துதலும் சிகிச்சை முறையாகும்.

வாய் சுகாதாரம் பற்றிய நிகழச்சிநிரல்

- வாய் சுத்தப்படுத்தும் போது மென்மையான பல் துலக்கிக் கொண்டு பல் ஈறுகளிலிருந்து பல்லின் நுணிவரை மெதுவான செயல் மூலம் சுத்தப்படுத்த வேண்டும்.
- சாப்பிட்ட பின்பும், படுக்கும் முன்பும் வாயை சுத்தப்படுத்த வேண்டும்.
- செயற்கை பற்களை எடுத்து நன்றாக துலக்கி தண்ணீரில் போட்டு வைக்க வேண்டும்.
- மது பானம், கார வகைகள், எலுமிச்சை, சிட்ரஸ் பழங்கள் சரியாக பொறுத்தப்படாத செயற்கை பற்கள் இவற்றை தவிர்க்க வேண்டும்.

குறிப்புகள்

- கீமோதெரப்பியினால் வரும் பக்க விளைவான வாய்ப்புண்னை குறைக்கலாம்.
- வாய்துர்நாற்றத்தை தடுக்கலாம்.
- கதிரியக்க மற்ம் கீமோதெரபியினால் வரும் நோய் கோளாறுகளை தவிர்க்கலாம்.
- புண்களில் உள்ள கிருமிகளை கட்டுப்படுத்த வேண்டும்.

செயல்முறை செய்வதற்கு முன்பு செய்ய வேண்டியவைகள்

தேவையான பொருட்கள்

- ஒரு தட்டில்
- நீர்கட்டி

நோயாளிகளை ஆயத்தப்படுத்துதல்

- நோயாளிகளிடம் செயல்முறைகளை விவரித்தல்.
- நோயாளியின் வாயில் வாய்ப்புண் உள்ளதா என்று பரிசோதிக்க வேண்டும்.
- வாய்ப்புண்ணை அளக்கும் அளவீடு கொண்டு வாய்புண்ணின் தீவிரத்தை கண்டறிய வேண்டும்.
- வாயை சுத்தப்படுத்த வேண்டும்.

செயல் முறை விளக்கம்

நேரம் 30 நிமிடம்

நீர்கட்டி

கால அளவு ஒரு நாளைக்கு 4 முறை (காலை, மதியம், மாலை, இரவு)

நீர்கட்டியை எடுத்து வாயில் ஊற்றி 30 நிமிடம் வைக்க வேண்டும். பின்பு விழுங்க வேண்டும் இதே போல் நாள் ஒன்றுக்கு 6 முறை, 30 நிமிடம் இரண்டு வாரம் செய்ய வேண்டும். இப்படி செய்வதால் கீமோதெரபியினால் வரும் வாய்ப்புண்ணை தவிர்க்கலாம்.

செய்முறைக்கு பின்பு செய்யவேண்டியவைகள்

நீர்கட்டி கொடுத்த இரண்டு வாரங்களுக்கு பிறகு அதே வாய்புண் அளக்கும் அளவீடு கொண்டு வாய்புண் குறைந்துள்ளதா? இல்லையா? என்று சோதிக்க வேண்டும்.

முடிவுரை

புற்றுநோயின் சிகிச்சை முறைகள் பல பக்கவிளைவுகளை ஏற்படுத்தும், பக்கவிளைவுகளை நன்றாக பரிசோதித்து கட்டுபடுத்தும் முறைகளை பின்பற்றி அதை வராமல் தடுக்கலாம்.

THE EFFECTIVENESS OF ORGAL HYGIENE AND ORAL APPLICATION OF CRYOTHERAPHY TO REDUCE MUCOSITIS AMONG PATIENTS RECEIVING CHEMOTHERAPY AT ASHWIN HOSPITAL, COIMBATORE.